U.S. DEPARTMENT OF COMMERCE
National Technical Information Service

PB-295 564

Central Florida Phosphate Industry Volume III. Responses to Comments on DEIS

(U.S.) Environmental Protection Agency, Atlanta, GA Region IV

Nov 78

PB 295564

United States
Environmental Protection
Agency

Region 4
345 Courtland Street, NE
Atlanta GA 30308

EPA 904/9-78-026c
November 1978

EPA

Environmental Impact Statement

Final

Central Florida Phosphate Industry

Volume III

Responses to Comments on DEIS

REPRODUCED BY
NATIONAL TECHNICAL
INFORMATION SERVICE
U.S. DEPARTMENT OF COMMERCE
SPRINGFIELD, VA. 22161

BIBLIOGRAPHIC DATA SHEET

1. Report No. EPA 904/9-78-026c

2.

3. Recipient's Accession No. PB295564

4. Title and Subtitle
Central Florida Phosphate Industry Final EIS
Volume III - Responses to Comments on DEIS

5. Report Date
November 1978

6.

7. Author(s)
EIS Preparation Section, EIS Branch, Region IV

8. Performing Organization Rept. No.

9. Performing Organization Name and Address
U.S. Environmental Protection Agency
EIS Branch
345 Courtland Street, N.E.
Atlanta, GA 30308

10. Project/Task/Work Unit No.

11. Contract/Grant No.

12. Sponsoring Organization Name and Address
SAME AS Box 9.

13. Type of Report & Period Covered
Final

14.

15. Supplementary Notes

16. Abstracts

The Central Florida Phosphate District encompasses an area of approximately 2000 square miles in Polk, Hillsborough, Manatee, Hardee, and DeSoto Counties, Florida. There are currently 17 potential new source mines in the district. This EIS assessed areawide and cumulative effects on the entire area and provides the basis for development of site specific EISs. The Final EIS establishes a scenario of phosphate development which was determined to be as compatible as practicable with other desired and intended land uses in Central Florida. Volume III contains transcripts of three public hearings written comments, on the Draft EIS submitted by Federal, state, and local agencies, environental groups, businesses and individuals and EPA's responses to public hearing comments and written comments.

17. Key Words and Document Analysis. 17a. Descriptors

17b. Identifiers/Open-Ended Terms

17c. COSATI Field/Group

18. Availability Statement

19. Security Class (This Report)
UNCLASSIFIED

20. Security Class (This Page
UNCLASSIFIED

21. No. of Pages
722

22. Price
PC A99/MF A01

FORM NTIS-35 (REV. 10-73) ENDORSED BY ANSI AND UNESCO. THIS FORM MAY BE REPRODUCED USCOMM-DC 8265-P74

EPA 904/9-78-026(c)

FINAL AREAWIDE ENVIRONMENTAL IMPACT STATEMENT

CENTRAL FLORIDA PHOSPHATE INDUSTRY

VOLUME III

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION IV
ATLANTA, GEORGIA 30308

APPROVED:

John C. White
REGIONAL ADMINISTRATOR

NOVEMBER, 1978
DATE

1a

FINAL AREAWIDE ENVIRONMENTAL IMPACT STATEMENT

CENTRAL FLORIDA PHOSPHATE INDUSTRY

VOLUME III

RESPONSES TO COMMENTS ON DEIS

VOLUME III

Contents

	Page
Section 1, Transcript of Public Hearings	1-1
Section 2, Responses to Public Hearing Comments	2-1
Section 3, Written Comments	3-1
Section 4, Responses to Written Comments	4-1

SECTION 1

TRANSCRIPT OF PUBLIC HEARINGS

SECTION 1

CONTENTS

Page

Transcript of Bradenton Public Hearing
May 22, 1978, 7:00 p.m. 1-1

Transcript of Bartow Public Hearing
May 24, 1978, 7:00 p.m. 1-111

Transcript of Punta Gorda Public Hearing
May 25, 1978, 7:30 pm 1-195

UNITED STATES OF AMERICA
ENVIRONMENTAL PROTECTION AGENCY
REGION IV

A Public Hearing:

DRAFT AREAWIDE ENVIRONMENTAL IMPACT STATEMENT
CENTRAL FLORIDA PHOSPHATE INDUSTRY

March 1978

Time: 7:00 p.m.

Date: May 22, 1978

Location: Bradenton, Florida

-o0o-

BAY PARK REPORTING COMPANY
COURT REPORTING
31 FOURTH STREET NORTH
ST. PETERSBURG, FLORIDA 33701
(813) 823-8388

APPEARANCES:

THE CHAIRMAN:

PAUL TRAINA
Director of the Enforcement Division
Environmental Protection Agency
Atlanta, Georgia

THE PANEL:

DR. MARVIN COLLINS
Florida Department of
Environmental Regulation
Tallahassee, Florida

BILL STOWASSER
Bureau of Mines
Department of Interior
Washington, D.C.

BILL PHILLIPS
Office of Regional Counsel
Environmental Protection Agency
Atlanta, Georgia

SPEAKER	PAGE
Ernie Estevez	35
Fred Duisberg	42
Gloria Rains	45
Jeff Lincer	60
Jonathan Miller	72
Ann McCrainie	78
Mary Greer	82
Archie Carr	83
David Rosen	91
Homer Greer	93
Jean Russell	101
Catherine Fernald	102

PROCEEDINGS

(Whereupon, at 7:10 p.m. the hearing was called to order)

MR. TRAINA: The hearing is open.

Good evening, ladies and gentlemen. My name is Paul Traina, and I am Director of the Enforcement Division of the Environmental Protection Agency, Region IV, in Atlanta, Georgia.

The Regional Administrator of Region IV, Mr. John White, has designated me to conduct this hearing tonight.

I'd like to introduce the panel members who are with me this evening. On my immediate left is Dr. Marvin Collins. Dr. Collins is representing Mr. Jay Landers, Secretary of the Florida Department of Environmental Regulation.

On my immediate right is Mr. Bill Stowasser. Mr. Stowasser is with the Bureau of Mines. He's representing the Department of Interior in Washington.

On my extreme left is Mr. Bill Phillips, who's with the office of counsel, with EPA in Atlanta.

And next to him is Mr. John Hagan, who is Director of our Environmental Impact Statement unit in our office of EPA in Atlanta.

Tonight's hearing is concerned with a two-year study on environmental, social and economic effects of continued expansion of the central Florida phosphate industry.

1-4

The purpose of the study is to comply with the National Environmental Policy Act of 1969.

Issuance of national pollutant discharge elimination system permits for new sources of phosphate mining and chemical processing operations constitute a federal action, which signficantly affects the human environment.

As such, the NEPA requirements require development of an Environmental Impact Statement prior to issuance of the NPDES permits.

It was determined early in 1976 that the number of new phosphate operations, which would request NPDES permits, would make individual site-specific Environmental Impact Statements ineffective in determining areawide and cumulative effects of these operations.

Each individual study would determine effects of that particular operation, and areawide or cumulative effects might easily have been neglected.

For this reason, all new source permits were held in abeyance while the areawide Environmental Impact Statement was developed.

A draft of this statement has been prepared, and notice of its availability was published in the Federal Register, Volume 43, dated April 21, 1978.

This hearing is for the purpose of receiving comments from the public on this draft Environmental Impact Statement.

All substantive comments on this draft EIS will be considered by EPA and summarized and addressed in the final Environmental Impact Statement.

This is your meeting tonight; we're here to hear your comments, and we can assure you those comments will be considered and addressed in the final EIS.

As stated on the agenda, we will start with a brief presentation by EPA, primarily the contractor for the study, Texas Instruments. They will summarize the major conclusions of the draft EIS and how the conclusions were developed.

At that point then, we will turn the meeting over to you for any comments you care to make on the EIS.

Before we get into the statement, or the summary of the statement by the contractor and my own people,, is there anyone representing any of the officials, elected officials, here, at the local level, Congressional level? We'd like you to stand and be recognized.

(No response)

Okay. At this point I'd like to introduce to you, I think a person who most of you know, Mr. Gene McNeill with EPA in Atlanta, who is the Project Officer.

Gene?

MR. MC NEILL: Thank you, Mr. Traina.

Just a couple more introductions. I saw a couple of our Advisory Committee members here, who have served on our

1-6

Advisory Committee throughout this study. I think I saw Bucky McQueen; he's the representative from Charlotte County. Yeah, there's Bucky. And Homer Hooks, the industry's representative. I saw him here somewhere. There he is.

Were there any more of the Advisory Committee members here? I didn't get a chance to quite look through all the registration cards to check it out.

(No response)

Other members of the Advisory Committee from, well, from this area anyway, we had a Commissioner, John Saba, from Sarasota County who served on the committee, is serving on the committee, I should say; Glen Schaefer from DeSoto County. Some of these others will probably come to some of the other meetings. And Gordon Bartle from Manatee County.

We're going to, in our presentation tonight, we're going to be extremely brief. There's no way, as those of you who are familiar with this study, that we could go into much detail, the findings and conclusions of this study tonight, and still allow time for presentations from you.

As Mr. Traina said, the primary purpose or the main purpose of this hearing, is to give you, the citizens, a chance to comment, both comment on the study, offer suggestions, or say what you think about it, both here orally, and, of course, as we stated, the record will be open to receive written comments through June 23rd.

With that, I think for right now I'll introduce Larry Bowles, who was the Project Manager for our prime contractor, Texas Instruments, Incorporated, and he'll make a brief presentation on the findings of the study, and then, after he finishes that, I'll summarize the proposed action, which is what we've been calling the selected scenario of the study.

Larry?

MR. BOWLES: Could we have the slide projector on, please?

My name is Larry Bowles. I'm with Texas Instruments, Incorporated. I'd like to introduce Dr. Audrey James, one of my colleagues, the ecologist on the staff.

And with her is Dr. Arnold Stalder, and there were a total of about a dozen of us who worked on the program who were considered the basic staff. At the peak of the program, there were about twenty-two of us with some consultants.

I've decided that the best approach for this presentation tonight would be, first of all, brief. I want to make the statement that this (indicating) is my pointer, in case you think it might be something else, and just cover with you some of the ground rules of the study.

As Gene pointed out, it would be very difficult in a presentation, at least in a brief presentation, to cover all the major findings; and then present to you some of the philosophy of the study, and then turn it back over to Gene and Mr. Traina for reception of comments.

First of all, reminding most of you, it was a seven-county study area, which involved the counties between Sarasota and Tampa, along the coast, and then a tier of four counties along the interior.

What we have outlined here is the study area and what is considered the Bone Valley formation.

This gray area is the majority of mined areas or active mines, and the crosshatching areas are mines that have been applied for, at least through the DRI process.

Topographic relief shows you that here in Polk County, you're on what's called the Polk County uplands and the mines extending down along the ridge and the new mines along the DeSoto plain and the ridge lying right in this area.

It also includes, the study area included the harbors of Charlotte and Tampa Bay.

Pardon the busy slide here, but I did want to cover some of the major ground rules under which we conducted the study for the Environmental Protection Agency.

First of all, to rely as much as possible on existing data.

We received help from many agencies, federal, state, regional planning councils and local agencies.

EPA furnished a considerable amount of data, especially with respect to radiation.

USGS allowed us to use their recently-developed model of the Floridan Aquifer and also furnished us with data to model the ground water of the area.

The Fish and Wildlife Service contracted to do their own inventory and distribution data of the fish and wildlife in the area.

The Bureau of Mines furnished a considerable amount of information, and we used the human population projections based on University of Florida estimates.

There was a steering committee representing the federal agencies and the Florida DER, as well as an advisory committee representing SWFMD and representatives of the seven counties, the environmentalists and the phosphate industry.

We performed an assessment of the environmental effects of five alternative scenarios proposed by the steering committee in the plan of study, with the major interest being towards the decision indicators described by the steering committee, with priority direction from them, as we developed the information, and, of course, the funding limitations being a constraint.

Then we assisted the Environmental Protection Agency in preparing the Draft Environmental Impact Statement, and we will be assisting them in responding to the comments received at the hearings and also in the mail.

TI has supplemented their staff, because of the very complex issues and the short time frame in which we had to pull the information together for the EPA, with people that had been involved in the issues for some time, representing the local Florida scene.

Mr. James Nicholas of Florida Atlantic University assisted Louise Young and Carl Hice of our staff in socio-economics. Dr. Paul Urone and one of his colleagues assisted Arnold Stalder in air quality.

Dr. Eric Rifkin assisted Audrey and Mike McDaniel in ecology and served in an advisory capacity on general effects.

Mr. Peter Schroeder of Geraghty and Miller assisted with hydrogeology with Bill Underwood and Bill Lancaster of our staff.

And Mr. Sam Lockwood of Tomasino and Associates assisted me and other members of the staff in describing the scenarios in more operational terms, as well as the surface water.

We did forecast the resources and the environmental demands as we could best project them through the year 2000. The baseline data and regulations were primarily as they existed on 1 August 1976. You have to set a time frame in which you're operating on any planning study, such as this, so our time frame was 1 August '76 to the year 2000.

We prepared preliminary findings in the form of working papers, which were distributed fairly widely, and we received many comments on those, which assisted in the development of the information to make sure it was valid and adequate.

The integrating theme that we used was that of performing environmental land use planning, and some of you may have been in attendance at a seminar that EPA and TI sponsored on that that helped bring out many of the issues that were very important in helping resolve some of the information together.

We did have to make some adjustments to the data base as it existed on 1 August '76. One was that existing future land projections, land use projections, had to be set for the year 2000.

In looking at future land use projections that existed on existing maps, we found that there was some naivete in development of a data base for the use of the land by the phosphate industry, and with the assistance of the individual phosphate companies in response to a land use questionnaire, we developed a more refined approach to their future land plans.

And we did base our regulations for permitting in wetlands and waters of the EIS based on full implementation of the Corps of Engineers regulations, even though they didn't become fully implemented until 1 September '77.

And again, for planning purposes, so we'd have a baseline to work with, those companies that were not permitted to operate, or the facilities that were not permitted to operate, by August 1 '76, we, for our purposes, considered them new sources.

We focused on two times; first of all, the year 2000, which we thought was the most reasonable forward projection we could make. The other one was the impacts associated with the year 1985, because of this peaking in production.

And pulling together the cast of characters, as would be the operation of the phosphate industry under the alternative scenarios, we first of all developed a list of those activities that were permitted as of 1 August '76, those who had, in some way, mostly through the DRI process, had acknowledged that they wanted to permit additional mining facilities, and then from the land use questionnaire, we made an additional list, one of which we put under the scenario describing permitting existing and new sources.

Let me footnote here that from the information we developed, the new sources or the new operations would be all mining operations.

There was one for some time period, there was one company that was planning on a chemical plant, but they changed their plans during the conduct of the study, so actually we're talking about mines, so this third list of mines here is what we call in the Draft Environmental Impact Statement the industry view, just to give a sort of pointed perspective if the industry was to carry out their plans as revealed by the land use questionnaires.

I want to acknowledge the help we got from several agencies and individuals, and this is just a sampling of them.

We obtained information, air quality information, through the use of one of our consultants from DER.

This is more information here on vegetative fluoride, which was a very important part of the study.

We obtained some information with the assistance of the various phosphate industries.

USGS, as I pointed out, did help us in developing a very good picture, as it existed in the data, of the ground water, Floridan Aquifer.

Of course, chemical characteristics of the seven-county study area were important, and we were assisted by the Corps of Engineers and their reports on that.

We did focus on Tampa Bay, as I mentioned, and we were assisted by the Tampa Bay Regional Planning Council.

Also the Central Florida Regional Planning Council assisted us out of Bartow, and again, we looked at Charlotte County, and the Southwest Florida Regional Planning Council assisted us there.

This long list is a list of phosphate effluence, phosphate industry effluence, besides describing the existing environment, as most people would define it. The phosphate industry has already operated in the area, so obviously they're part of the existing environment, and we needed this information to describe that part of the environment, and we were assisted by the Department of Environmental Regulation.

All the staff members of Texas Instruments conducted a field reconnaissance photo and visual observations and some sampling to assure that we were acquainted with the area, and we took several hundred pictures, and this is just a small sampling of some of the scenes we did see.

Here, an aerial reconnaissance; this is an active strip mine. In the background you see a hardwood forest.

Of course, some of the other scenes we saw included a beneficiation plant, where the rock is pre-processed, and much of it is then made into chemical fertilizers in plants in the seven-county study area.

This is a mined pit that was abandoned, as best we can tell twenty-five to thirty years ago, and left pretty well without man's intervention, and this is what resulted under natural system dynamics.

Here's a slime pond. You can see the water fowl in the area. Again, not a considerable amount of man intervention; there's some natural restoration here.

This Tenoroc wildlife refuge is a cooperative effort between the phosphate company and the Florida Audubon Society, and this particular slime pit has undergone some natural de-watering and re-vegetation, so this is part of your landscaping in the seven-county study area.

Additionally, an additional reclamation practice is to fill and level the land to plant grass, and this particular area, very near Bartow, is used as a recreation park.

By far, the majority in percentage of the land reclaimed by the phosphate industry is used for grazing.

Some of the scenes where there has not been direct involvement of the phosphate industry include this sand pine scrub, a hammock, and of course the wildlife associated with these, range land. Here's a type of wetland, wet prairie, and another type of wetland.

Agriculture is another major industry in the seven-county area, especially in the area the phosphate industry is proposing to mine.

Besides cattle grazing, the course includes truck crops as a major agricultural industry in the seven-county study area, as well as citrus crops.

Of course, we have your rivers. This is the Peace River, which is used for commerce, recreation ---

And, of course, the bay. I believe this is confluent with the Alafia into Tampa Bay, and you are familiar with, of course, the resort communities, which represent another major land use of the study area.

There have been approximately 1,700 pages of reports published, part as working papers and the Draft Environmental Impact Statement, and we'd like to think us, along with EPA, strive for excellence.

We don't claim to be perfect, and as hard as we did work, we did discover that there was one table that probably would have clarified some of the text material in the Draft Environmental Impact Statement.

I'll show this for just about thirty seconds here, and this will be included in the final Environmental Impact Statement, as well as the other comments received.

And that's all I have, Gene.

Thank you.

MR. MCNEILL: As Mr. Traina will point out in a few minutes, when we get to the part about your comments, we'll ask you to come up and use this podium.

Just a couple of comments before I get into the proposed action.

I mentioned an advisory committee a few minutes ago, and the advisory committee was made up of representatives from each county in the study area, and a representative from the Southwest Florida Water Management District, and we asked the Florida Phosphate Council to select a representative to represent industry, and we asked the Florida Audubon Society for a representative to represent the Florida environmentalist groups, and Charles Lee was their representative.

We also had a steering, inter-agency steering committee, which I did not mention, and this initially was to be made up of the federal agencies, which are involved in regulating, permitting, or at least in affecting the Florida phosphate industry, and of course these agencies would be several interior agencies: the US Army Corps of Engineers, because they're involved in the 404 permitting, or, permitting dredge and fill operations affecting the waters of the US and wetlands, and of course EPA and CEQ also were involved.

At the first steering committee meeting, we decided we should also ask the State of Florida, since the advisory committee was set up with primarily local agencies and representatives.

We decided to ask the State of Florida for a representative on the steering committee, and we wrote the governor, and the governor designated Jay Landers as the steering committee representative.

And then, just a couple more introductions. I see Bud Randall is here; he's the Manatee County Pollution Control Director. I know I saw him earlier. Bud?

And Jeff Lincer from Sarasota County; he's the acting director of Sarasota County's Pollution Control, and one guy that helped us so much I've got to introduce him, Bill Wilson with USGS out of the Tampa sub-district office. Don't hide, Bill, I saw you earlier. He's here.

Is there anyone here from the three regional planning councils that Larry mentioned?

I'm sorry; I can't see for the light in my glasses. Would you holler out your name?

MR. OCKUNZZI: Bill Ockunzzi with the Tampa Bay Regional Planning Council.

MR. MCNEILL: Tampa Bay Regional Planning Council. Some of the regional planning councils are conducting their hearings on their 208 plans now, last week, this week, and next week. I'm sure they're involved in that.

But those three agencies, as Larry said, provided a lot of information and input into this study.

Okay. With that, I'll go into, real briefly, I'll go through what we call now the proposed action and briefly explain it.

We put copies of the EIS out on the table. I hope anyone who has not received a copy through the mail was able to pick one up, and those who have one or have a copy here, if you'll just open it to page 1.70 to the front, or middle, of the text part of it.

These four pages, 1.70 -- three pages -- 1.70, 1.71 and 1.72 do outline the proposed action.

I'll quickly explain what we mean by that. Many of you have been involved throughout this process and are familiar with how we went about selecting this proposed action, but for those of you who aren't, I'll briefly explain it.

Our original plan of study included six scenarios. We call it scenarios because we were talking about an area-wide study and not an individual plant complex, so we were talking about scenarios of development of the industry, and these range from full development or permitting all new sources who made application under existing regulations, local, county, regional, state and federal regulations.

That was, you might say, the full action scenario. It ranged from that, as required by the National Environmental Policy Act, which is the legal basis of development of the Environmental Impact Statement.

We are required to have a no-action alternative, in this case the no-action scenario, and that one was no further issuance of any new source NPDES or water discharge permits.

As we mentioned in some of the public meetings we had, throughout the study, we really didn't expect any one of the six scenarios to be selected, but we said probably it would be a combination, and it is a combination.

The proposed action constitutes a combination of what we feel is the best of each of the scenarios that were in the original plan of study.

Now, the basis of this selection, what we were calling the selected scenario and are now calling the proposed action in the EIS, this is based on all the information that was developed during the study, which, as each task, each major task in the plan of study, as each of those tasks were completed, we made available what we call working papers, what you might say reports on the information developed in each individual task as it was completed, so of course that was the information we developed.

But what, in some cases, was even more valuable were the comments we received on the working papers. That's an easy way to find out whether you're doing it right or wrong, is to, as you do your work, make it available to the public and to the industry and environmentalists and let them look at it, and they'll let you know.

People will let you know if you're off track, and they'll point out what your errors are, and this has been a valuable process in the study, making these working papers available and receiving comments.

Now, we have not yet been able to, as we received comments on the working papers, to revise and re-issue each working paper. We were using the comments, and they were used in the, as I said earlier, in selection of the scenario.

But right now, once we got this draft EIS together, we were able to get around to using these comments and what we're doing right now is we are re-writing, with the contractor assisting, we're re-writing, revising, the working papers, and they will be re-issued.

Like we said in the public notice, it would be re-issued about the time as the final EIS. We think now it'll be re-issued prior to issuance of the final EIS, and these will reflect, as I said, all the comments we got.

Okay. Based on all that information that was developed, plus, as most of you are aware, several advisory committee meetings, several public meetings and several steering committee meetings, we were able to come up with a combined scenario, which was the selected scenario, which is the proposed action and is outlined on pages 1.70 through 1.72.

So now, I'll quickly go through this and turn it back over to Mr. Traina so we can get to the important part of this meeting.

First of all, and again, this is the scenario for development of any new source mining and beneficiation operations or new source chemical plants, as defined by EPA under the NPDES permit system.

First of all, the requirements for mining and beneficiation operations. One was to eliminate the rock drying process at the beneficiation plant and transport wet rock to the chemical plants.

In the interest of time, I won't go into any detail as to what the benefits of each of these individual requirements are, but I'll just briefly go over the requirements.

I think some of these are obvious, such as that one; eliminating the drying process would eliminate existing, or, would eliminate air emissions of particulate or dust, which would result from a new phosphate rock dryer.

Of course, in this case, we do, as you see just under that, we have a possible exception. It's been pointed out to us, the original selected scenario stated that period, but it's been pointed out to us that when rock is shipped on the world market to Europe, Canada and Japan, that it may not be feasible to ship the wet rock.

It may be more costly from an energy standpoint to ship additional, say, 6 to 15 percent moisture, which is in the wet rock, than what energy would be saved from not drying it in Florida.

So we will allow, on the site-specific studies --- I should mention right now, since I haven't yet, any new source mine or chemical plant will still have to do a site-specific EIS.

This areawide EIS will be the basis of the site-specific studies. This will provide the areawide and cumulative effects, but any new source will have to do a site-specific EIS.

So in this case, if this exception were to be applied in a specific case, the site-specific EIS would have to examine, first of all, if it would be more costly, from the energy standpoint, to ship the wet rock than to dry it in Florida.

And then, second, since part of the basis for concluding eliminating the drying process is the effects, the effects of the air emissions of the dust, plus the emissions of radionuclides, then we would ask a close examination of the effects of such a drying operation, if it met the other condition of the exception. In both particulate emissions and radiation, control would have to be assured prior to issuance of the permit.

Okay. I went into more detail on that one than I intended to. I won't go into that much detail on the others.

The next one is to meet the --- In the case of the water discharges from the mining operations, the State of Florida's effluent limitation is more stringent than EPA's. We're saying meet the State of Florida's effluent limitation on the mining operations.

We find that that does adequately protect receiving water.

The next one is eliminate conventional above-ground slime disposal areas. I think the slime disposal problem is certainly one of the major problems in the mining and beneficiation operations.

The next one is --- We really are sort of repeating, since we're saying our basis is, first of all, meeting existing

1-24

requirements, but we're repeating here in the scenario meet Southwest Florida Water Management District consumptive use permit requirements.

And closely following that, we say provide storage that allows recirculation of water recovered from slimes.

What it amounts to, under existing Southwest Florida Water Management District requirements, the industry, the mining and processing has about reached its limit on the amount of water that can be feasibly recirculated.

As they go to this technology that allows elimination of the slime ponds, it releases water that is right now in the conventional operations tied up in the slime settling process and does allow for greater recirculation.

But we're saying that in the site-specific study to show that you will provide for adequate storage of that water released from the slime, so it would be otherwise tied up in slime than a conventional slime settling operation to increase the potential recirculation, actual and potential recirculation of water.

And of course the goal here is to further reduce usage of water from the Floridan Aquifer.

This next one is something we were asked to look at, with some of the comments we received, several of the comments, was to look at the use of connector wells, more of a concern of adverse effects, I think; plus a concern should it be continued as a water conservation measure, and we're listing this in the proposed action.

We're saying continue to use connector wells but only with very careful, I should say, continued very careful monitoring by the industry, local government and the state and the Water Management District, careful monitoring primarily to assure that water quality, which -- I don't know how many of you are familiar with connector wells.

They drain water from the shallow water tables directly into the Floridan Aquifer, and generally the water quality in the shallow water table is sufficient to allow direct discharge into the Floridan Aquifer, but it does take careful monitoring to assure the quality continuously meets drinking water standards, as one example, so it can be discharged directly into the Aquifer.

So what this one, use connector wells, is saying is continue to do that but with careful monitoring.

The next one, the EPA Office of Radiation Programs is continuing to work on guidelines, which we really expected to have been published by now, and these guidelines are regarding radiation levels allowable on reclaimed land, both for existing structures on reclaimed land and guidelines for allowable levels on undeveloped reclaimed land.

I talked with the Office of Radiation Programs just last week, and they're assuring us now that these two sets of guidelines will be out in June and July, and these will be in final form. They have been out in draft form. I'm sorry; they won't be in final form, but they will be published in the Federal Register as proposed guidelines.

The draft copies were distributed several months ago.

MR. TRAINA: I might say, Mr. McNeill, it's refreshing to have EPA criticize EPA in a report. I think it's about time we did something like that --

MR. MCNEILL: Well, I think the only ---

MR. TRAINA: -- admonishing EPA to come out with some radiation guidelines.

MR. MCNEILL: The only thing, as Larry pointed out, and as we said several times through the study, one thing we've really found is that we're not perfect. That's one thing we've proven, I think. We already knew it.

Okay. The next one, meet county --- Again, we're repeating what had been one of the bases, is meet existing requirements, but we're saying again meet county and state reclamation requirements, and we're saying and further, include in the DRI and, if a site-specific EIS is developed, which it will be for any new sources.

An inventory of types of wildlife habitat in the area to be mined and in the area immediately surrounding it, and we're saying here, and this is just going a little further than is currently done in DRI's and will be done in site-specific EIS's anyway, we're saying just in the mining reclamation plan, take into account the existing wildlife habitat in the immediate area and surrounding area, and come up, as part of the mining and reclamation plan, a plan to adequately protect the wildlife resources along with other resources in the area.

And then, the next one is protect or restore wetlands under the jurisdiction of the Corps of Engineers, Section 404(b) of the Federal Water Pollution Control Act.

And within that one, we have categorized wetlands, and we're saying that these will be further defined in the site-specific studies, but I won't repeat what we have written here. You can see what it is.

But what we're saying is Category 1 wetlands are the ones that are so important they must be protected, and must be protected to the extent that they shouldn't be mined.

We're saying even a temporary loss of these wetlands, even if they could be restored over a twenty-year period, say, the temporary loss is too important to these wetland systems to allow them to be destroyed, even if the destruction is temporary.

Category 2 wetlands are those which are less important than Category 1 and could be restored to perform useful wetlands functions.

As I say, these will, of necessity, have to be defined in the individual site-specific studies, and then again, Category 2 might be an isolated pocket-type wetland, which the site-specific study would determine is not important to perform wetlands functions, either on a -- certainly not on a regional basis, but even on a local basis, and would therefore not have to be protected or restored.

Okay. That's briefly the scenario for further development of the mining industry.

For our chemical processing, as Larry stated, under our proposed action, by canvassing industry, and Bureau of Mines and others, we understand that there aren't any proposed new source chemical plants and, of course, we have no way of knowing. A new company may come in tomorrow and plan to construct a new chemical plant, but everything we hear from the industry and the Bureau of Mines tells us that the chemical processing capacity from now until the central Florida area is mined out --- The chemical processing capacity is already here; no new chemical plants are needed.

But we did examine the effects of existing chemical plants and included in the proposed action any requirements that would have to be met if a new chemical plant were proposed.

This first one is, again, sort of repetitive, because we're saying --- We have already said that we would meet any existing requirements, but we're saying that, as far as air pollution, air quality, to meet the existing new source performance standards or meet the new source performance standards; and also, on the water part of it, we're also saying meet the design surge capacity in the recirculated water system that are included in the EPA standards of performance for new sources for water.

The next one is not an existing requirement. We're saying that because of the potential of any of these new source chemical plants, contaminating ground water and the Floridan Aquifer from the highly-contaminated water in the gyp ponds or the recirculated contaminated water systems, because of that potential, we would say to line these gyp ponds with an impervious material, unless, in the site-specific study it could be or can be demonstrated that lining is not necessary to protect the ground water and the Floridan Aquifer water from chemical and radiological contamination.

The next one goes further than existing EPA requirements. We're saying recirculate contaminated and non-contaminated water, or in the EPA effluent guidelines definition, this would be recirculate the non-processed water, as well as the processed water, using the same design surge capacity, which means to design for a twenty-five year rainfall event for both processed and non-processed waters.

The next one is not an existing requirement. It is being done in a couple of instances in existing industries:

provide for recovery of fluorine compounds from phosphoric-acid evaporators.

The reasoning behind this is with any polluting material that is recovered and used as a product is a material that definitely will not be discharged to either the atmosphere or the receiving waters or ground water. It's no longer a potential pollution problem if it's made into a product and marketed.

That is the rationale behind that, and it is --- Technology is available to recover fluorine. However, as we were going through, receiving comments on the recommended scenario, the earlier selected scenario, industry pointed out to us that right now the market is saturated with the few chemical plants that are recovering fluorine. There is no further market for recovered fluorine products.

So we did change that wording from absolutely recovering fluorine to determine if, as I said, if a new source chemical plant makes application for a permit, we would have to determine at that time if there is a market for fluorine. We would ask the company and the consultant on the site-specific study to make that determination, and if there is not --- If it can be shown at that time that there is not a market, we would ask that the fluorine levels in the contaminated water system pond be controlled by some other means, such as one possibility would be recovering the fluorine as an insoluble material and stockpiling it, but some method of removing the fluorine compounds from the contaminated water system so that the emissions from the entire plant complex, including fluorine emissions to the air from gyp ponds, would not exceed existing emission limitations for the entire plant complex.

And this next one I think is going to be easy. It seems that industry is going more and more --- I think virtually all of the existing chemical plants right now are either in the planning, design or construction stages for recovering uranium from phosphoric acid, but again, you can't project, you know, since the next new chemical plant, if there is one, may be twenty years from now, we can't absolutely project that there will be a market for uranium then, so we are leaving it so that the recovery of uranium would be encouraged through the site-specific EIS.

I say that's a real quick, brief rundown of the proposed action or what we've been calling the selected scenario, but as we also said earlier, the primary, absolutely the main purpose of this meeting here tonight is to obtain your comments, so since I don't know if Mr. Traina announced it or not, we have to be out of here at 11:00, so I'll turn it back over to Mr. Traina.

MR. TRAINA: Thank you.

MR. MCNEILL: Thank you.

MR. TRAINA: As you can see, Gene is very involved in this study, and he's been involved with it for a couple of years, and he really has this thing down to great detail, but he's available, obviously, during, after and has been before and will continue to be for any specific questions.

Before getting into your comments, a few notes -- a few comments, rather.

First, I have a list of cards here of people who have indicated they wanted to speak. If you do want to speak, we'd appreciate your filling one out and so indicating on one of these yellow cards that are available at the registration desk in the back.

Also, if you don't want to speak but if you would like to receive a copy of the final impact statement when it is published, you'll have to fill out one of these cards so you can get on our mailing list.

There's also another place on the card if you'd like to just get on the general EPA mailing list of other activities that go on in EPA, Region IV. You can just so indicate on one of these cards. If you haven't already done so, please fill out a card.

We're conducting this public hearing pursuant to some federal regulations that require this, and I think I should add here that the requirement is based on law, the Federal

Water Pollution Control Act, the Clean Air Act, and obviously the National Environmental Policy Act, all require the agency, EPA in this case, to involve the public, to have public hearings like this; not that we wouldn't probably do it, but I just wanted to let you know that this is a requirement of law, and certainly you should take advantage of that requirement, and we're here to listen to what your comments are tonight.

Again, just for the record, the notice of this public hearing was published in the *Sarasota Herald-Tribune* on May 8th, 20th and 21st, and the *Tampa Tribune* and *Lakeland Ledger* on May 7th and the 21st, and then we did mail copies of the public notice to individuals and organizations on the EPA mailing list, as well as to all the appropriate local, state and federal agencies.

We're going to conduct the rest of this as we have earlier -- informally. We don't have any rules of evidence or anything like that.

Feel free to come up, say what you want to say. We ask that if you have a prepared statement, if you'll provide it to me, and then I'll turn it over to the court recorder.

We are recording this; we have a court recorder right here, again for the record, so that we will be able to respond to these comments that you have in the final EIS.

As I call the name, I would like to ask the individual to come up, identify themselves, and make their statement.

As Gene indicated, we got a notice when we walked in here that we're to leave by 11:00. Either that, or spend the night here, because they lock the doors at 11:00.

I have fifteen people here who'd like to make statements. I've made a quick calculation; that's approximately ten minutes per. We've got about three hours. We'd like to hear all you have to say, but try to keep it within the ten minutes.

Certainly we will receive written comments. The record will be open for several weeks after this, and I'll get into that in a minute.

Okay. Without further ado, let me call on Mr. E.D. Estevez, Director of the New College Environmental Studies.

MR. ESTEVEZ:

Gentlemen, my name is Ernie Estevez. I live at 409 Pine on Anna Maria; I am from New College. I hope nothing I say will be held against them.

T-1

I have two comments. One is a substantial contribution, I hope, or at least it's a reflection of what I think is an important contribution being made by the Fish and Wildlife Service, having to do with wildlife management.

Some themes that have emerged from their large study, which I certainly hope will receive a great deal of attention as this draft is improved, is that there is a need beyond generic habitat protection. That is, it's one thing to say that wetlands need protection, and perhaps wetlands can be classified into sub-groups and management policies developed for each of these sub-groups. It's another thing to say that pine flatwoods are a habitat type which can or cannot be disturbed.

But it's another thing to take a wildlife approach and a species approach and an ecological approach that would recommend, as US Fish and Wildlife has, that the concept of refugia and corridors for the movements and the dispersal of organisms be the operational procedure by which land use management is effected.

T-2

That is, in the draft that I have studied, there are no operational procedures for wildlife and habitat management, only policies.

Perhaps that's appropriate for the goals of the draft EIS, but I would suggest and call to your attention that the US Fish and Wildlife Service has contained in its reports the themes of refugia and corridors, which can serve either at local, regional or state levels of resource management as effective means of insuring that habitats and the species of importance therein are not made to -- are not too discretely divided.

My second comment, after having reflected on the diversity of subjects contained in the EIS, has to do with more of an editorial comment.

It seems like after several readings of this thing, most of the important issues fall by the way, and one's mind is preoccupied by less important things.

T-3

But to get it off my chest, and it won't form a part of my written comments, but it is a view that I would like to state, is the apparent reliance of the draft EIS on the conduct of monitoring.

Monitoring, then, is really the central point of my comment tonight.

Of the fourteen proposed actions, which are drawn from a mixture of three different scenarios, over half demand close agency supervision and monitoring.

These are: one, that the industry meet all of Florida's effluent standards.

Two, that consumptive use permits, issued by the Southwest Florida Water Supply District, be met.

Three, that forthcoming EPA radiation standards be addressed and adhered to.

Four, that local and state reclamation schedules be recognized and followed.

Five, that some level of wetlands protection be effected.

Six, that new source performance standards are followed.

And suggested by the EIS is seven, that tighter water standards be imposed to protect Tampa Bay and Charlotte Harbor.

Eight, that existing sources be retrofitted for 1983 compliance with new source performance standards.

And nine, that fluorides be monitored.

Now, the dependence of this draft on existing state agencies and local agencies and their current functions, to me parallels in many ways the dependence of the Coastal Zone Management Plan on that same concept, and I think, as with the Coastal Zone plan, it's fair to ask what success, if any, we've achieved in a decade of environmental sensitivity or action, a decade or an era which is, really, coming to an end or at least a temporary pause in the State of Florida.

And the examples that I would suggest be examined to determine whether or not in the State of Florida at the present time we can expect effective application of state regulatory agencies, as they are structured and function, to the issues of phosphate mining, include the monitoring of the industry itself, and ancillary projects, such as the deepening of Tampa harbor, the production of electricity, which supports the phosphate industry, and the issuance of water use permits.

Now, I've followed each of these cases and been involved with some in some detail, and from a privileged perspective, having been privileged to participate, or at least contribute to these efforts, I can say that neither the harbor-deepening project nor the protection of local environments around power plants that support the phosphate industry or the philosophies engendered by the Southwest Florida Water Management District have so far been models of resource management, despite a plethora of rules and agencies, many of which are involved, are seated here right now.

There has been no effective management or monitoring of harbor deepening in the Tampa Bay estuary. We have state agencies that have only recently become aware that the project is going on. We have others who have actively ignored it.

With regards to power production, I would simply say that most of the power generated by Tampa Electric Company goes to feed the phosphate industry and that much has been made of the fact that power provided that industry is interruptable on a public demand.

But I point out that, whereas the power may be interruptable, the pollution produced by the plants are not. No matter who uses it, the public or private industry, it is still the public living in the coastal areas around Tampa Bay, far removed from the sites of the principal users of the power, who suffer the health decrements and general decrease in the quality of life, attending the power plants of that company.

It is in my opinion that as of this date, there are no effective environmental protective measures being implemented at the newest and largest plants of Tampa Electric Company.

With respect to the Water Management District, I feel that the phosphate industry is responsive and responsible with respect to water management and has evolved so over the last several years, and that they would follow consumptive use guidelines issued by the district.

The district, on the other hand, has apparently chosen to adopt the philosophy that water will never be a limiting factor in all of southwest Florida, and that, irrespective of all other considerations, water will be supplied for best, for reasonable and beneficial uses, however defined.

Now, I'm generally a strong supporter of environmental protection and regulatory agencies. In the last ten years, much of the effort and the accomplishments of these agencies has been directly due to public support.

Unfortunately, in the last ten years the public has enjoyed, perhaps, a greater than due measure of influence in the direction of environmental regulation agencies.

Accordingly, sometimes these agencies may have been misguided in their efforts, but with respect to the practical goals and policies, which are stated in the draft EIS, all which are commendable and very effective if executed, we must not duplicate the mistakes made with the Coastal Zone Management Program, which were, to restate them: reliance on existing structures, institutions and operations without the support and without the funding required to see that they do their job.

And my last comment would be that it might be better that many of these recommendations be left up to industry, instead of assuming that government will pursue them.

The reason for this is that if industry accepts these requirements as part of their permits and then do not follow up, there is recourse of the public through the courts. It is part of their permit requirements, and if they do not follow those standards, they are liable to legal action; whereas, if state regulatory agencies do not follow through with the monitoring and with the close management and supervision, which is required for this proposed action to work, federal agencies will not withhold money, and the public has no recourse.

I think I'll close with those comments.

MR. TRAINA: Those are very interesting points, Mr. Estevez.

(Applause)

I just want to comment; there is such a thing as malfeasance that all those governmental people have to face.

Charles Covest? I'm sorry; I can't get your name ---

MR. COVEST: Charles Covest, but I'm going to pass and take advantage of your offer that we may make a formal written comment to you in the future.

MR. TRAINA: Fine, sir.

MR. COVEST: However, for Save Our Bays, Mr. Fred Duisberg has a specific comment that I know he would like to make, if he can do that in my place.

MR. TRAINA: Certainly, sir.

Mr. Duisberg?

MR. DUISBERG: But I will have a card here, so I might just as well wait.

MR. TRAINA: Well, you're next, so why don't you just come on up, sir? I think you planned that.

(Laughter)

MR. DUISBERG: That wasn't rigged. It just happened that way.

MR. DUISBERG:

As a matter of fact, my comment is very brief and was to be a short note to go to John Hagan, as specified in the letter that we received.

However, I felt that, well, I'd rather go through this meeting and then perhaps enlarge on our comments.--

MR. TRAINA:

Certainly.

MR. DUISBERG:

-- which we will do, but I will, in any case, read this very brief note that we had prepared.

T-4

It states: "In consideration of the summary of major environmental impact as stated in the draft Areawide Environmental Impact Statement, Central Florida Phosphate Industry, March 1978, by your agency -- " and this is addressed to EPA, or, to John Hagan -- "Save Our Bays Association, Sarasota, Florida, wishes to be recorded as requesting United States EPA that no further permits be granted for the mining and processing of phosphate in the area covered by this study, except for fully-established as essential -- for those fully-established as essential for use in this nation only.

"It is our sincere belief that the extension of phosphate mining and processing can only be detrimental to the best interests of the people of this area and to all of our nation.

"In the words of the Florida Phosphate Council, phosphate feeds you," and this (indicating) is their brochure.

"If we accept this as the truth, we must also accept our obligation to protect this invaluable resource and our responsibility to future generations."

Now, that's sort of end of speech, but I would point out that the phosphate industry and the Phosphate Council points out the importance of phosphate.

In their brochure, they state, and this is definitely a misstatement --- Well, they state that we can't ---

I'll quote just a few lines: "The phosphate industry is as vital as the food we eat because, quite simply, without phosphate, we wouldn't eat."

Now, this is probably true as far as modern agriculture is concerned. There's no doubt in anyone's mind of the value of phosphate in our agricultural processes.

It does state, though, that "By a quirk of nature, Florida, land of sunshine, golden beaches, crystal lakes and springs --" and I don't know; you probably saw some of the pictures that were shown on the slide here of the crystal lakes and the springs, and so forth, in the phosphate-mined areas, and I happen to have been a resident in Polk County back in 1929, in the earlier days. I've also gone through the phosphate-mined areas, and to me they're nothing but dangerous deserts.

So, anyway, to go on, it says " -- is also one of the world's largest phosphate reserves."

Well, now this is certainly entirely untrue.

I believe that we have, in the study area, possibly 4 percent of the world's reserves, and yet we make the statement, or the Phosphate Council makes the statement that this is one of the world's largest.

As a plain matter of fact, it's one of the smallest, and it's one that is essential to the future of the United States and the future of Florida, certainly, Florida agriculture.

We're going to be in a much worse bind when we have to buy back phosphate from foreign sources than we are in the present bind when we're being squeezed by the OPEC nations.

Certainly, phosphate, if it feeds us and which it most certainly does, is one of our most essential resources. It behooves everybody to absolutely protect it, and I would urge that EPA make this their first point of consideration.

And I guess that'll do it for now.

Thank you.

(Applause)

MR. TRAINA: Gloria Rains? It's always a pleasure to have Ms. Rains. I've known her for several years, and I'm glad she's with us again.

MS. RAINS:

I'm Gloria Rains of 5314 Bay State Road,

1-45

Palmetto, Chairman of Manasota-88.

Manasota-88 is a bi-county organization dedicated to the preservation of environmental health.

Our members request the following changes and/or additions be added to the final phosphate EIS statement.

(1) On page 2.3, the statement says there is no proof to date any activity of the phosphate industry causes a radiation impact on the general populace. Your radiation summary says radiation effects would be manifest in cancer statistics, especially lung cancer. No mention is made of readily available statistics regarding cancer on p. 1.52 and 1.53.

We suggest you include the information that Florida has the highest rate of lung cancer in the United States, the statistics weighted so incidences are not attributable to age.

It does not seem unreasonable to assume, based on studies by Goffman and others, that these lung cancers are related to the high levels of radioactivity in our region. Additionally, statistics readily available from the Department of HRS for last year show that Florida led the nation in deaths from cancer.

(2) We suggest the assumption, based on admitted monitoring and other informational deficiencies, that

radium content in the water of the seven-county area is not due to contamination of ground water by the phosphate industry be deleted because it is unsubstantiated by credible evidence.

(3) The statement should recommend both public exposure standards and environmental contamination standards for the phosphate fertilizer industry and associated uranium recovery operations.

Airborne aerosols enriched in uranium and polonium-210 as well as radium-226 in surface waters and both radium-222 and polonium-210 concentrations in biological systems should be given particular attention and standards developed.

(4) The statement should recommend that a determination should be made of the correlation, if any, between high ambient radiation and fluoride levels in areas of high incidence of cancer.

(5) The statement on p. 1.48 that all radiation exposure is considered harmful, with adverse effects assumed to be proportional to dose and that long-term effects of low radiation doses are not fully known, conflicts with the statement on p. 2.86 that background radiation levels may increase slightly in the immediate vicinity of the uranium-recovery modules but their increase will be insignificant. We suggest the latter be deleted.

(6) We think it should be noted that existing phosphoric acid plants are capable of producing up to 4,570,000 pounds or almost 20 percent of the 1975 United States uranium production and that this operation combined with mining, other processing and redistribution of by-products of phosphate ore creates concentrations and redistribution of radioactive substances and release of radioactive gases and particulates in close proximity to populations and in concentrations considered hazardous.

(7) The statement implicates radon gas and its daughters as the prime radioactive hazard associated with mining and processing. There is no mention of radioactive particulate alpha activity, proven in recent studies when found in the lungs to give rise to cancer. Ambient air samplings of gross alpha concentrations of wet phosphoric acid plants showed concentrations 15 times background values.

Inhalation exposure to high levels of radon and its daughters were singularly ineffective in promoting lung tumors but did give rise to life shortening and other effects.

This readily available information should be included in the statement along with the recommendation that more attention needs to be given to the role radioactive particulates, as a by-product of phosphate mining and processing, play in the development of cancer.

(8) The statement should also note that, as found in EPA volume LV-781, stack sampling of phosphoric acid plants show appreciable concentrations of the naturally occuring radionuclides are being discharged into the environment and that elevated airborne radioactivity concentrations, with polonium-210 and radium-226, were found in several adjacent plant work areas. Concentrations of polonium-210 during ambient air samplings were approximately 100 times background values. Thorium concentrations at 3.25.

(9) Additionally, the statement should strongly recommend studies be done regarding the effects of radioactive particulates and other radionuclides when combined with our almost nightly air-inversions.

The very significant area of inversions and their effect on area pollutant levels seems to have been completely omitted from the statement.

(10) The statement does not adequately address gypsum stacks and ponds.

Samplings of seepage from inactive gypsum piles show that they yield and continue to yield significant quantities of radium to surface streams and ground water for years after the pile is abandoned. Because of the solubility of the gypsum, this problem is analogous to, but more critical than the problem of stabilization of uranium mine tailings.

Quantities of radioactivity entering the environment through gypsum waste contain approximately 80 percent of the product radium-222 that will enter the environment as a potential polluter.

As an example, a relative amount of gypsum contains 460 curies of radium compared to 77 for normal super-phosphate fertilizer.

No other industry in this country is permitted to pile mountains of waste hazardous to human health on the landscape and walk off and leave it to society to control.

The statement should certainly recommend that the industry be required to stabilize gypsum stacks to prevent further leaching and erosion and to provide other such maintenance encompassing all necessary pollution control measures for the life of the gypsum stacks.

(11) The statement suggests impervious linings for gypsum ponds but also suggests clay, although not impervious, be substituted. Clay is not adequate as is documented in Dr. Sam Upchurch's Study.

The surface and possible subsurface seepage that would result from the use of clay will not likely, as suggested, be solved by ditching, pumping, etcetera.

We ask the statement recommend only a completely impervious material be permitted.

(12) The statement does not adequately address

the effects of wet process phosphoric acid plants, located on areas that are underlain by limestone. Acidic gypsum water can react with limestone resulting in the development and enlargement of cracks, etcetera, permitting the movement of contaminated water into the ground water. Many plants which report a negative water balance on the contaminated water-system are actually discharging radioactive waters to aquifers.

We think the final statement should recommend radiochemical contaminant monitoring of adjacent aquifers and shallow ground water quality.

(13) With these facts regarding the damaging effects of phosphoric acid plants, we request the final statement recommend a moratorium on the expansion of present or creation of new phosphoric acid plants until such time as methods and standards exist to control the further distribution of radioactive materials into the environment.

(14) The subject of control of fluoride emissions and recovery and its economic implications have not been adequately addressed. However, it is acknowledged that through lax regulations and inspection, fluoride levels have been permitted to increase.

While most of us are familiar with the U.S. Department of Agriculture's studies showing fluorides have caused more world-wide damage to domestic animals than any other air pollutant, that fluorides have affected both phosphate workers and nursery operations, new evidence from a study by Dr. Bertram W. Carnow and Dr. Shirley A. Conibear shows the extensive damage caused by exposure to fluorides and strongly indicates fluorosis must be redefined.

The results of this study, conducted at union request, show that a highly significant relationship was found between increasing levels of fluorides and other pulmonary irritants and obstructive pulmonary change.

The measure of fluoride exposure was displayed in a history of muscular-skeletal symptoms.

The striking correlation of muscular-skeletal symptoms, bone surgery and bony abnormalities and a high bone risk index suggests that the disease fluorosis is more than dense bone. It is a clinical and pathological entity in which the bone density changes are only one component. The study suggested the disease be called muscular-skeletal fluorosis.

The study also found a high incidence of deaths from lung cancer, leukemia and lymptoma and recommended an immediate program to sharply reduce emissions.

No tests were done of people living in the general area of the plant.

We suggest the damage identified as being caused by fluoride emissions points up the need for the immediate development of standards to reduce the levels of irritant gases and particulates in phosphate plants and surrounding areas. The cost of the latter is insignificant compared to the damage presently being done to the human populace.

(15) We recommend the deletion from the draft the statement that increasing numbers of phosphate pits have recreational potential if properly reclaimed. It is questionable until definitive tests regarding the uptake of radioactive materials by fish and other marine life are accomplished that these areas can be safely used for fish management or recreational areas.

Additionally, because of partially completed studies it is very doubtful that reclaimed mine lands can be safely used for agriculture or pasture. We refer to the uptake of radioactive contaminants by the livestock and crops. Hence, if new mining is permitted now, we will experience a substantial decrease in agricultural lands and pastures. It is doubtful for the same reason that it is advisable to permit even single-family dwellings to be developed on reclaimed lands.

While the draft mentions this problem, we think the final statement should emphasize that as more tests results are coming in, it may very well be that phosphate mining precludes further use of the land for any purpose, that phosphate mining constitutes a permanent use of the land.

(16) Phosphate processing plants are forecast to annually consume 94,490,000 gallons of water per day. Mining less. In your study assessing the effects of this operation on the Florida Aquifer, you admit that the study assumed that water pumpage by municipalities and agriculture will be at the same level in 1985 and year 2000 as it was in 1975, in spite of almost geometrically increasing population forecast for this area.

Even under this optimum circumstance, Manatee County faces a drawdown of 10 feet with increased danger of salt-water intrusion.

You further admit that the study results would be considerably different if your projections for municipal use are incorrect.

We suggest this section indicating no severe impact on water quantity be thrown out of the study.

(17) We request the same treatment for the statement on p. 2.67 that secondary effects on water quality were taken to be potential effects for which there is insufficient evidence for concern.

(18) The study speaks of wastewater discharges to be allowed from existing facilities and new facilities under certain rainfall or equivalent conditions as having to

meet best practical technology standards.

What the study fails to mention is that present BACT effluent limitations for the phosphate industry are identical to the best practical technology standards mentioned. We suggest the final statement make this clear.

(19) The final statement needs to more adequately address the increased potential for slime pond breaks threatening the water quality of Class I waters and what this would mean to our area if we lose our reservoir.

It should also be noted in the same section that elimination of slime ponds is not technically achievable until after year 2000.

(20) Wetland restoration has not been demonstrated and seems highly unlikely on a large scale. Therefore, the preservation of wetlands comprising 12.34 percent of the land cover in the study area should be ensured. Wetlands we recommend be defined as including areas in which the water table is at near or above the land surface for a significant part of most years and shallow submerged lands and to be expanded to include the definition and identification of wetlands that are developed as a result of studies by the U.S. Interior Department.

Preservation is based on ensuring the source and quality of water necessary to keep these wetlands in a biologically healthy state.

Under present modes of mining operation, this is impossible because of changes in adjacent land terrain, alteration of the local hydrologic regime and changes in the particular constituents of the water.

Therefore, we ask you recommend the no-action alternative of this statement because without this recommendation, it seems highly unlikely that any wetlands will survive in the phosphate mining area with all this portends for the future of our area.

(21) The statement does not address the reduced water recharge areas which will result as a loss of these wetlands and what effect this will have on our aquifers.

(22) The draft needs to be corrected to reflect the following:

The impacts of supporting activities, such as electricity generation and transportation, will permit further deterioration of our air quality, will increase thermal pollution, water quality degradation, etcetera.

The statement on p. 2.67 dealing with power plant impact should be changed from minor impact to accurately reflect the above.

We find the statement that industry discharge of high concentrations of inorganic nutrients are beneficial and are responsible for the unusually high productivity of both Tampa Bay and Charlotte Harbor an inaccurate statement.

It should be corrected to indicate Charlotte Harbor is showing signs of deteriorating water quality as has Tampa Bay for some time.

(23) To suggest phosphate mining is needed to support the continued development of Tampa Harbor because it's needed for area industries is a distortion of fact. The ability of private capital to support ports in the state of Florida unfortunately does not seem to be relevant to their existence.

This is obviously a blatant special interest statement and should be changed to reflect the fact that a recent nationwide poll distributed by the Florida Department of Commerce shows business executives revealed access to water transportation ranked last in a list of forty-nine determinants for industrial location and operation.

(24) We request your statement recommend the development of a non-renewable resource policy for the mining of phosphate. As stated on p. 1.2, the demand by the United States will exceed the domestic supply before 2010.

It would seem both logical and imperative to have some control over the sequence of mining and the amounts of phosphate permitted for overseas shipment.

The long-term effect of this action on our economy would seem to be slight. As stated in the draft, mining does not appear to have played a significant role in the growth of the region since 1960. The tax revenues realized are small when compared to the costs of the damage the industry creates.

The average real earnings of $7,914 per miner is a relatively low wage and can probably be easily equaled as these workers are readily absorbed by the much healthier to worker environment, the service industries. The latter cited as likely in the draft p. 2.60.

(25) Suggested as an adequate safeguard in the draft, to depend upon tests to maintain good environmental quality is unrealistic. We have an inadequate number of regulatory personnel right now. That water and air will be tested regularly, connector wells checked before abandonment, etcetera, is not likely.

To depend on adequate self-regulation is not realistic either. We refer, as one example, to the Brewster mines, supposingly exercising the latest state of environmental control and when finally checked, it violated one regulation after another.

(26) Though we understand the constraints of time and money, lack of adequate data in some areas, etcetera, we find that readily available, most important information was ignored and the draft is very poorly organized.

To help offset this, we suggest the final statement incorporate information furnished at these and other public hearings and that the final statement include a section created by combining all the information on each subject in the draft, permitting each subject to be treated separately.

This is what we have done in our draft review and is the only way deficiencies, discrepancies and, most important, the full impact of the industry can be realized.

This form will enable the reader to fully realize the projected destruction of all our wetlands in the mining areas, our forests, our agricultural lands, that the carrying capacity of our area will be further stressed, our water quality and quantity further threatened, our air quality further deteriorated, our fossil fuel position worsened, our lives threatened and shortened by increases in radioactive levels, threatened and endangered species further stressed -- all to permit the rapid depletion by mining of a non-renewable resource.

Based on the latter, we request you recommend in the final statement that the no-action scenario be adopted until the serious environmental problems cited are solved and until a non-renewable resource policy is developed.

Thank you very much.

(Applause)

MR. TRAINA: As always Ms. Rains, it's a

very thorough and detailed statement. We appreciate your bringing all those items to our attention.

John Rains?

MR. RAINS: I waived mine for Ms. Rains.

MR. TRAINA: Thank you, Mr. Rains.

Anwar Wessa?

MR. WESSA: I pass.

MR. TRAINA: Jeff Lincer?

MR. LINCER:

How do you follow an act like that? That's all right, Gloria, but I'll be careful of my sequencing next time.

I am Jeff Lincer of 4718 Dunn Drive, Sarasota. I'm an Environmental Specialist for Sarasota County. I'm appearing this evening at the request of Sarasota County to comment on the draft Environmental Impact Statement as it relates to the phosphate industry in the seven-county study area.

We can certainly appreciate the amount of work and the energies that went into the preparation of this draft EIS, and compliment EPA's staff and their consultants for bringing it to its present stage.

There are, however, some serious concerns that Sarasota County has with respect to the draft EIS, and these are as follows:

With respect to air and water pollution, on page 1.9 the statement is made that "The industry's air and water emissions are controlled by collection devices or other treatment to meet state and federal effluent standards."

This may very well be the way the system is supposed to work. However, I think the question which should be raised is whether or not the system and the equipment is operating as envisioned to insure environmental quality.

T-5

With respect to the natural environment and climatic conditions, the statement is made on page 1.10 that "Because of the area's flat terrain and steady winds, incidents of extreme air pollution in west central Florida are not common and occur primarily only in heavily populated or industrialized areas, such as Tampa."

T-6

This may very well be generally true for west central Florida, but it's our understanding that Sarasota was to be included in this seven-county study area.

Discussions with meteorologists at the National Weather Service station in Ruskin indicate that inversions occur in this area almost on a nightly basis.

In this light, and given the average age of our retirement community, we feel that additional investigation ought to be made of what might be a unique climatological situation in this area.

Data do exist in the files of the National Weather Service in Ruskin, which deals with parameters, such as wind speed and direction, height of mixing layer, etcetera, these things that relate to inversions.

We would strongly request that these and other pertinent data be reviewed to determine the importance of air inversions in and to the county of Sarasota.

We can take little comfort in some of the twenty-four hour SO_2 data, as reported on page 1.11, and this was pointed out, Although these remain below critical levels, analytical problems uncovered by EPA indicate that actual levels may have been two to three times higher than those reported.

T-7

The 1976 fluoride emissions by the phosphate industry were reported at 315 metric or 346 short tons; fluoride levels in vegetation, according to the draft EIS, are dependent upon rainfall frequency, thereby explaining the high, that is 60 part per million, levels in 1974.

We feel that this would be acceptable to explain the 1974 high fluoride levels, but the data presented in figure 1.3 indicate a trend of increasing fluoride levels starting in 1972, with ever increasing levels of fluoride.

We would like to be sure that these data are subjected to rigorous statistical examination to insure that the conclusions are justified.

With respect to fluoride and uranium, recovery of these two compounds, based solely on economic consideration, as implied on page 1.72, is totally unacceptable in view of the documented damage caused by these compounds.

T-8

They should be removed from the waste water as a simple matter of health protection. If a profit results, so much the better for the industry. But placing such an emphasis on profit is neither justifiable nor desirable from the public or environmental health standpoint.

As a matter of precedent, an historic achievement of this action, USS Agri-Chemical and W.R. Grace are recovering fluoride from phosphoric acid, and the Uranium Recovery Corporation, Gardinier, a subsidiary of Westinghouse, Agrico Chemical, and Freeport Minerals are all performing a similar recovery for uranium.

With respect to uranium, a savings in terms of oil, energy equivalents, and therefore foreign dependence, would be considerable and is estimated to be between 97 and 129 million barrels by the draft EIS itself.

T-9

With respect to water use and with respect to the recommended connector wells, as suggested on page 1.72, the utmost caution is encouraged such that existing aquifer water is not degraded.

If the use of floating dredges, for instance, which would not necessitate de-watering of a mining site, can be shown to result in less overall environmental impact, then this approach, it should be encouraged.

T-10

Water quality: A misconception that has been perpetuated by the draft EIS, as it stands now, is that EPA, and I quote "has no direct legal authority to change requirements for existing sources."

This is stated on page 1.74 and is virtually hogwash. One has but to turn to Section 102 of Public Law 92.500 and find the following diametrically opposed statement, which relates to specific point sources, and I quote:

"Whenever, in the judgment of the Administrator," this is the EPA Administrator, "discharges of pollutants from a point source or a group of point sources, with the application of effluent limitations required under Section 301.d(2) of this Act, would interfere with the attainment or maintenance of that water quality in a specific portion of the navigable waters, and industrial uses and the protection of public waters under cultural and industrial uses, and the protection and propagation of a balanced population of shell fish, fish and wildlife, and allow recreational activities in and on the water, effluent limitations, including alternative effluent control strategies for such point source or sources shall be established, which can reasonably be expected to contribute to the attainment or maintenance of such water quality."

Not only does EPA have the authority, they have the legal responsibility to improve existing effluent guidelines, when studies like this support said corrections.

Along these lines, Sarasota and the State of Florida are already on record as saying that the application of best practical technology would result in substantially more stringent effluent limitations.

With respect to habitat lost and in particular with respect to the wetlands, we are encouraged to see reference made on page 1.21 to the Florida Department of Natural Resources classification of mixed forest communities, hammocks, and dry prairies as highly endangered, and emphasis being placed on their importance to wildlife.

T-11

Without a doubt, the area's wetlands -- that is, the bay heads, the hardwood swamps, cypress swamps, mangroves, wet prairies, wet water marshes and salt water marshes, are the area's most important ecosystems in terms of life support or productivity.

Hardwood swamps and cypress are, we concur, number one and number two, respectively, in importance.

As pointed out in the EIS, Darnell's '76 study indicated that the loss of wetland habitat is the most important impact of construction activity. This is on page 3.3.

We also concur that and emphasize that these Florida wetlands are of national significance, because they, with some of the similar habitat in southeast Louisiana, are the remaining wetlands of significant extent and value in the United States.

In speaking of expanses of natural vegetation in "larger parks," mention is made of the Hillsborough River State Park, on page 1.20, but no mention is made of the Myakka River State Park, which is right on one of those rivers likely to be the most impacted by plant phosphate mining activities.

T-12

I think the Myakka is the largest in the State of Florida.

With respect to projecting the changes in land use, which will occur in the future, table 1.31 on page 1.63 is misleading. It indicates that wetlands, which represent 178,268 hectars -- think metric -- as of 1975 will diminish very slightly, and in fact decrease only 1.1 percent over the period 1975 to the year 2000.

In view of the interrelatedness of phosphate deposits in wetlands, it would seem unwise to project such a minimal change unless strong regulations are enacted and enforced to protect these critical areas.

T-13

If this projected decrease is based in any way upon the assumption that a significant amount of the wetlands can be returned to their original structure and function, then serious thought ought to be given to the embryonic state of the art of reclamation.

That is, to our knowledge, no one has yet to demonstrate through reclamation of a hardwood swamp, , a cypress head, or any other category of wetland which takes tens, if not hundreds, of years to reach their ultimate degree of complexity and function, dependent upon as yet poorly understood and interrelated parameters -- things such as drainage, organic matter, temperature, etcetera.

T-14

With respect to any DRI or site-specific EIS, not only should a thorough inventory be made of the types of habitat, but a scientifically credible assessment of the interrelationships between those habitats and the proposed development should be clearly stated, considering the species a special concern.

With respect to inventorying wildlife, and it is too easy to simply include a list of species thought to be there, special care should be taken to list rare and endangered species and species of special concern recognized by both the Federal Office of Endangered Species and FCREPA which, as many of you know, is the Florida Committee on Rare and Endangered Plants and Animals.

As a final note concerning reclamation of these habitats -- that is, their habitats -- it should be done in such a logical sequencing pattern that both plants and animals are provided adequate refugia for the life of the project.

This is something Ernie Estevez pointed to very nicely, I thought.

With regard to sampling, as indicated on pages 4.4 and 4,5, the water monitoring program and dam inspection -- that's dam inspection -- program suggested are the bare minimum which the public should expect to maintain the quality of their environment and their health.

T-15

With respect to the dams, I'm not sure I understand why there's any needs for any dams if we're

1-68

not going to have above ground storage. I'm not sure that there's even a need for initial above ground storage.

If, in fact, inspection, sampling and monitoring are to reflect a normal situation, these events should be unannounced.

The resulting data would not only give the Agency that much more confidence, but assuming that the results are positive, it would give the industry a welcomed opportunity to show off the results of its efforts to maintain a high quality environment.

With respect to sampling frequency, that is for source sampling and ambient water monitoring, the sampling program should not be locked into a quarterly basis, and provisions should be made for more frequent monitoring should the situation justify it.

This same comment would hold, then, for the sampling of receiving waters at optional locations downstream from the discharges.

If the objective of the annual composite sampling of all discharges is to develop a picture of the additive effects, the frequency of once a year would not be acceptable, since far too much damage could be done to the aquatic environment long before the need for remedial action would be determined by that monitoring program.

Any composite sampling, obviously, from a variety of discharges should take into consideration analysis which would be proportional to both flow and time of operation.

With respect to radiation, after Gloria covered it I'm not going to go into any great length, but with respect to radiation, the potential for human health hazard is great.

Because much of the data is still being developed, with this EIS in mind, we'll reserve comment on the subject until concrete figures on exposure, chronic effects, etcetera, over time, are available.

Where the research has been done, human hazard has been indicated.

We will make additional comments on the subject when additional data are available and are analyzed.

With respect to economics, we would like to point out that inadequate consideration has been given to the economic burdens which phosphate mining operations place on the community services and the intra-structure and, as we heard before, things such as a substantial monitoring cost.

T-16

On the national scale, as you've heard before, it seems utterly foolish to encourage exportation of any finite and strategic resource, such as oil or phosphate, and by doing so, we place ourselves in such a precarious position with respect to the dependence on other countries.

In view of the history on oil, we would strongly recommend that no more phosphate be exported until a sound national policy on this can be established.

We will save additional comments on this and radiation and inversion and a number of things for our written comments, which will be submitted shortly.

T-17

In closing, and with reference to the basis of the scenario, the State of Florida has already taken steps to provide more stringent protection against the adverse effects of phosphate mining, which go beyond federal requirements.

We encourage you to strengthen the scenario in the indicated areas so that EPA and other federal agencies will be able to meet their responsibility in re-enforcing the environmental protection efforts of the state and local government.

Thank you very much.

(Applause)

MR. TRAINA: I might just say, Mr. Lincer, that you more than adequately followed Ms. Rains, and I thank you very much.

Jonathon Miller?

MR. MILLER:

My name is Jonathon Miller. I live at 1333 Third Street in Sarasota. I'm the Chairman of the Manatee-Sarasota Committee of the Sierra Club, and I hope we'll get around to forwarding you a written statement. I don't think we could add too much to Gloria Rains' presentation on behalf of Manasota-88.

Manasota-88 encompasses approximately the same region of interest, that is Manatee and Sarasota County, that our group does, so I just wanted to re-emphasize some of Gloria's points.

And I'd like to ask you how to best proceed. I have a number of questions, and I'm wondering if it's appropriate to ask questions and get answers at this point or whether I should ask them rhetorically, and you can deal with them ---

MR. TRAINA: If you would, maybe ask them rhetorically.

MR. MILLER: Okay.

MR. TRAINA: Again, the reason --- We'd like to hear the comments. If those obviously are in the form of questions, get them in the record, and as indicated earlier, they will be addressed in the final statement.

Certainly afterwards, if you'd like to address comments to the panel here or someone else, but any questions or comments that are made will be addressed in the final EIS, if you make them.

MR. MILLER: Okay. That sounds good. Thank you.

MR. MILLER:

I'd like to start on page 1.72 on the categories of wetlands.

You suggest here that the categories will be defined for regulation. Now, I don't know exactly by what method they would be defined, whether this would be just a strict definitional determination or whether there would be some mapping involved.

T-18

If you do go to a mapping, I assume it would have to be areawide rather than a site by site basis. This would seem to be the best way to proceed, and I hope that you'll choose an appropriate scale.

I've noticed lately that the LUDA material for land uses covered, in terms of wetlands, is just not sufficient for this area.

I recently was working on a piece of property about 50 square miles. The wetlands were quite fuzzily delineated by LUDA, and we went out in the field and found there were more than 900 small wet season ponds on this tract of land.

Now, these small ponds just don't show up with your units of mapping that LUDA has, and yet I do believe that they do have a significant function and role in both the hydrologic system and also habitat, which leads me to the Category 3 wetlands, which are described as isolated and normally intermittent in nature and have insignificant hydrological functions and minimal life support value.

I have a little trouble with this. It's hard for me to understand how you could prove an area, a wetland, has an insignificant hydrological function.

T-19

And I hope you can get in touch with the, I guess it's the US Weather Service in Miami. They've done some work along these lines, and apparently are ---

There's a possibility, and I don't think it's been documented to anyone's satisfaction at this point, but the formation of thunderstorms in the summer in this area is, of course, dependent on the water, the surface water conditions that prevail on the surface of the land. And changes in the configuration of the surface water bodies, I believe, can have an effect on the conditions that lead to the development of thunderheads.

So even though you may have the same area of wetlands, you may take an area that was a number, let's say, 1,000 small wet prairies or isolated ponds, and you may take their total surface area and convert them into one large acreage, and they may not have the same world in a meteorological sense, and so to say that the small, isolated intermittent ponds have an insignificant hydrological function, I think that's a possibility, but I haven't seen anything that could establish that to my satisfaction.

Going back to the previous page, page 1.71, one of your points in the proposed action is to provide storage that allows recirculation of the water recovered from slimes, and the surge capacity is to be determined during the other site-specific EIS.

T-20

And that takes us to --- I'd like to speak a little to that point. I'd like to refer to page 2.27, Section 4. It's titled "Require Reduced Water Usages."

It's not obvious to me that this is reduced water use. It appears more as though this is a concept of reducing the water sheds in the area, and something that is not entirely clear to me from the statement that I think needs to be perhaps stated clearly is exactly how much of the site would be available for holding this rainfall.

Would it be the entire site that could be used for collection of this water or some subset of the properties?

What I'm concerned about here is the creation of internal drainages, where all the water falling on an operation may be contained in that area. It may be recirculated and used by the phosphate industry, but it may never get to the estuaries.

And I think this is a pretty major problem, and you appear to deal with it or attempt to deal with it on page 3.4, but that's a little confusing to me also.

This is the section on quantity of water, and the last sentence says, "As new mines come into operation, the amount of surface water existing in the study area due to slime ponds and slime-pond runoff impoundments will tend to decrease, resulting in less evaporative water loss in the areas affected, which will tend to increase rainfall runoff and surface-water recharge."

Well, I think in view of the proposal to change the slime operation, that makes sense. In other words, I agree with you that the area's surface water existing in slime ponds and slime-pond runoff impoundments may decrease, but I think the real question here is will the total surface, total area of the surface water on the phosphate sites increase or decrease.

And the previous section, 2.27, deals with collection of the ten-year, twenty-four-hour storm, and the twenty-five-year, twenty-four-hour storm, which suggests to me that perhaps the amount of surface water on the site will be increased rather than decreased and, of course, this is going to represent a loss to the water shed and eventually to the estuaries.

The only other point I'd like to bring up is, from the slides that were shown earlier, I got the impression that you relied to a fair extent on the fish and wildlife study that was done of the seven-county phosphate mining area.

And yet in your literature cited, you make no reference to this study which, I believe, was something in excess of 1,400 pages and dealt specifically with the phosphate mining and wildlife in the seven-county area.

T-21

It's true that your EIS does reflect and is based to some extent on this information. I hope, then, it would be possible to cite it in the new literature.

And if that is not the case, then I'm going to have to get in touch with some Fish and Wildlife people and ask them why that 1,400-page document didn't have a larger role to play in the development of the EIS.

Thank you very much.

MR. TRAINA: Thank you.

(Applause)

MR. MCNEILL: Mr. Traina, could I make a quick comment?

MR. TRAINA: It seems you've struck a responsive chord here by our project leader.

MR. MCNEILL: That very last statement he made, that was an oversight. That Archibald report from the Fish and Wildlife Service, contract report, it was definitely utilized, and it was an oversight that it did not get referenced in the -- that it was not cited in the references, but we thank you for pointing it out.

MR. MILLER: Thank you.

MR. TRAINA: I'll say generally that it's very unusual for one bureacracy not to get credits in another bureaucracy's report, so it must have been an oversight.

Jane Rose?

(No response)

Ann McCrainie?

MS. MCCRAINIE:

I'm with the Citizens Against River Pollution, and I'm going to be very brief. Our specifics will be in a written statement.

I want to speak specifically in regard to the wetlands. You acknowledge that the wetlands are the most important ecosystem in terms of life support and productivity and that the Florida Department of Natural Resources has also indicated that wetlands probably are the most valuable natural system from the standpoint of benefit to society.

So we therefore refer to your statement on page 1.22 that wetlands are expected to decline.

It is our understanding that the current study being done by the US Department of Interior, the Fish and Wildlife Service in St. Petersburg, are to be considered in this draft, and that's been answered for me. Thank you.

And we would also now request specific recommendations be solicited from the federal wetlands study, probably or possibly permitting in regard to mining the wetlands.

And noting that the study adopted the Corps of Engineering (sic) criteria, which is the 5 cubic feet per second flow; we have one question in regard to this recommendation.

T-22

As the tributaries are destroyed, will the Corps criteria not obviously decline, therefore diminishing the areas of permitting and monitoring, and what provisions are being made?

Is there any inventory that you have presently available as to the flow of 5 cubic feet per second and in what areas of the seven-county area is this being done?

MR. TRAINA: Are you talking about streams less than 5 cubic feet per second ---

MS. MCCRAINIE: Yes. What I'm saying is that, if you have adopted that criteria and then as the wetlands diminish, as they are mined, then obviously that is going to decrease the flow, so the jurisdiction is also going to decrease.

MR. TRAINA: Okay. I understand your point. Thank you.

MS. MCCRAINIE: And we would like for that to be clarified in some way, at what point.

The point has been made, we want to reiterate, that since successful reclamation of wetlands has not been achieved over a period of time, we request that stronger statements be incorporated for the preservation of wetlands.

Now, as far as the map in the land use portion, in comparison to the projected mining areas, specifically for Hillsborough County, there's tremendous contrast, as far as the land use area, and the projected mine use areas.

T-23

Can we assume that this is a commitment on the part of the industry that these areas will not be mined until after the year 2000?

I would also like to point out that you stated you would support the county and state laws, and in

T-24

the Hillsborough County Conservation element adapted in the horizon 2000 land use plan, we state that is minimize the adverse impacts of mining by prohibiting mining in rivers, streams and alluvial wetlands, except in extreme cases of overriding public interest, and I would like to leave this conservation element for your files.

And I would also like to mention, in the water section, just for the record, that the Alafia River proper is greatly influenced by Lithia Springs and Buck Horn Springs, and I would also like for EPA to note that those two springs are owned and being pumped severely by the phosphate industry.

Thank you.

MR. TRAINA: Thank you very much.

Gordon Palm?

MR. PALM: I pass.

MR. TRAINA: Excuse me?

MR. PALM: I'll pass.

MR. TRAINA: That's very unusual, Mr. Palm. I always expect you to say something, at this point especially.

You're sure now?

MR. PALM: Yes, sir.

MR. TRAINA: I just can't imagine the industry not having something, after listening to all this, but so be it. Does that presume that the document is satisfactory or is the council ---

(Laughter)

MR. PALM: No, sir.

MR. TRAINA: -- is the council supposed to send us some written comments?

(Laughter)

MR. TRAINA: Well then, I guess I'll presume the document is satisfactory.

(Laughter)

MR. TRAINA: Mary Greer?

MS. GREER: The points have been covered, but I would like very much to read a statement by Manasota-88 and the gentleman from Anna Maria ---

(Whereupon, a discussion was had off the record between Ms. Greer and Mr. Traina)

MR. TRAINA: Please do come up.

MS. GREER:

Mary Greer, citizen of Manatee County, a former health education director.

I'd like to call your attention to the cause for my concern. Most of our population in Manatee County came here to preserve their most valuable commodity -- health.

We are anxious that this study and the EPA protect this healthful environment for those who have invested their all in this area.

Such an excellent job has been done by several people here, by most all. They have covered most of the points that I have carefully thought through.

However, it seemed to me that the start of dealings that would protect the air and the water degradation from exposure is a point that we would like very much to have accented.

Also, a limit placed on the amount of phosphate mining in particular areas.

These are the only two points that I had considered. They were so perfectly covered I certainly enjoyed both of them, all of them.

MR. TRAINA: Thank you very much, Ms. Greer, for coming up.

(Applause)

MR. TRAINA: Archie Carr?

MR. CARR:

Mr. Traina, gentlemen, good to see you again. Ladies and gentlemen, my name is Archie Carr. I'm Special Assistant to the President for Science of the Florida Audubon Society.

I have reviewed the draft areawide impact statement and submitted a letter of response to Mr. White, the Regional Administrator of Region IV of EPA, and I think, as a matter of convenience, the best thing for me to do would be to read the letter into the record here.

I thank you for the opportunity to comment on behalf of the Florida Audubon Society on the Draft Areawide Environmental Impact Statement.

First, I find the areawide approach that EPA has taken with the EIS process in central Florida to be an interesting one and one I think will efficiently lead to equitable environmental protection. I hope history will bear out my optimism.

I would also like to compliment you and your staff for the admirable job of condensing the volumes of information developed by Texas Instruments and subsequent proceedings into a very readable volume.

I have several comments regarding the content of the EIS that are presented in no particular hierarchy of importance.

The first of these is not listed here and concerns endangered species. I get a sinking feeling by reading the document, in consideration of this area.

In the body of the text, Section 1, there is reference to endangered species with a general remark that things will not fare well for that whole category of plants and animals.

The concept, the group of animals, the point is not raised again until we get to Section 6, "Irretrievable Commitments."

In that section, it speaks to habitats. Now, in other areas of concern, for example air and water quality, there is greater elaboration of what EPA feels it will do to achieve protection, concessions that will be made, and so on.

I do not feel that the impact statement adequately expresses how endangered species will be protected, as I believe they should be under existing law, irrespective of events that are going on in Washington at this moment.

But I think that the final draft would be greatly improved by more detail of exactly what we can anticipate to be the impact on endangered species or how those impacts will be avoided as a result of EPA's action. T-25

Now, to go on here, the first item is fluorides. It is stated under Environmental Impact of Proposed Action, Section 3, page 3.1, that "no new chemical plants are projected under the proposed action, and consequently fluorine emissions will not increase."

This, I understand, is possible largely because existing processing plants will continue to be used for the rendering of phosphate rock from new sources.

It has become abundantly clear to us that old plants retrofitted with fluoride pollution control equipment are far less efficient at controlling fluoride emissions than new plants in which pollution control equipment is designed into the plant from the beginning.

T-26

The EIS would be improved by inclusion of the fluoride pollution control capabilities of the plants which are intended to process phosphate from new mines.

(b) I appreciate that EPA is recommending biological monitoring of fluorides, Section 4, page 4.1, ambient vegetative-fluoride sampling program.

I believe it should be expanded, and I submit for your consideration a research plan, enclosed, authorized by EPA to monitor fluorides potentially emitted by the Occidental Chemical Company operation in the vicinity of the Suwannee River, north Florida.

The results of the north Florida research and the techniques developed there might be very useful to a more complete monitoring program in central Florida.

I hope you don't feel I'm setting you up, Mr. Traina.

MR. TRAINA: No. As a matter of fact, as I recall the hearing we had up there, you suggested we use the one down here, and I think that's fair. That's very fine, sir.

(Laughter)

MR. CARR:

I will not attempt to outine a specific monitoring program for central Florida, but I do ask that you study the North Florida Research Plan with an eye for its relevance to the central Florida area.

Ms. Rains raised several points with respect to public health. I have not addressed them, and I think that --- Well, I would be frightened to find out all there is to know about fluoride pollution in terms of public health.

I believe that I would like to underscore her remarks in that area. If animals that I sampled had fluoride contamination, I'm even more worried about people.

Under wetlands, I approve heartily of the intent and justification to protect wetlands expressed in the EIS.

I notice that many, 36 or 39 archaeological sites, are located within them, adding to the basic ecological and hydrological good sense of protecting them. T-27

I don't elaborate on this more, by the way, because I have elaborated with Gene McNeill and EPA at great length over this subject, and our positions are very well stated, I believe.

1-87

However, I am very disturbed by the concept of cutting the hydrological throats of the wetlands expressed under "Effects of Controlling Activities in Waters of the US and Wetlands," page 2.90.

And perhaps I should explain this point. The idea that's developed in the EIS is that we will vow to save the wetlands, so we'll mine around it, and it leaves the wetland isolated, the principle that the EIS stated.

T-27

If leaving wetlands on dessicating pedestals spells their doom, then avoiding them to begin with becomes nonsensical. The environmental objective is lost, and the sacrifice by the phosphate industry is wasted.

I agree with the conclusion that "mining effects on remaining or undisturbed wetlands should be addressed in greater detail," page 2.91.

I recommend that the principle of the pedestal concept receive thorough attention in the final EIS, and that it be stressed that the danger of wetland garroting should be carefully addressed in site-specific EIS proceedings, which will follow the areawide, assuming there is a go alternative.

Finally, energy and phosphate conservation: It is apparent that the huge energy requirements for phosphate mining and processing, described on page 2.7, is met only because the industry receives a subsidy in the form of lower rates from TECO and Florida Power.

Just as it is said that the industry competes with the public for aquifer water, so it can be argued the industry competes with the public for energy.

From data presented on phosphate supplies and demand, on page 2.8 to 2.11, it is apparent that more energy will be required to extract a given unit of rock in the very near future.

Sub-economic resources are expected to become economically recoverable when the market value of phosphate increases.

The fallacy and danger of this argument is that not only more money but more energy will be required to produce what are currently sub-economic resources. Energy, unlike the market, will not inflate. It will only deplete. Thus there will be two interdependent and non-renewable resources following extension curves, and the cost of phosphate, energy and food will be presumably logrithmically increasing.

I cannot help but envision a crisis emerging from these divergent curves. I believe the history of fossil fuels is a sufficient model to lead to this conclusion, but I have every confidence that a complete evaluation of current phosphate resource management practices, combined with agricultural study, would prove

1-89

the point.

In view of the above, I look with great concern on the industry's enthusiastic search for new and larger phosphate markets abroad. It is argued that the national balance of trade is served by phosphate export. What fossil import is required to subsidize that export? I would be more content if in the final EIS the US Department of Energy commented on this point and on the compliance of phosphate mining expansion with national energy policies.

T-28

I'm inclined to believe that American agriculture and the American consumer are being set up for a food-cost crunch in the near future, perhaps before 2000. This crunch could be at least postponed by domestic resource conservation commensurate with incentives to Morocco to bring her massive resources on line rapidly.

In summary, I believe EPA will succeed in providing for a clean industry in west central Florida if the areawide EIS is adhered to.

But I am worried that EPA is becoming innocently involved in gross resource mismanagement. If I am correct, then the cleanliness will be a trivial accomplishment.

Sincerely, Archie Carr.

MR. TRAINA: Thank you, Mr. Carr.

(Applause)

1-90

MR. TRAINA: David Rosen?

DR. ROSEN:

My name is David Rosen, M.D. I've been living in Sarasota, the Sarasota-Bradenton area, for the past year. My address is 508 Bay View Drive, Longboat Key.

However, I've been coming to this area now on vacation, I would say for the past twenty-five years.

T-29

I have practiced medicine in New York City, and I would just like to acquaint you with something that, as a physician, we knew for a long time.

We know that the area of northern New Jersey has been an area of very high cancer incidence. Lately, it has appeared in the papers throughout the nation, but as physicians we knew that about ten to fifteen years ago.

The incidence of malignancy in northern New Jersey is about ten times as great as that in other areas in the United States.

We also have an area in New York State where the incidence of malignancy is very high, and that's in the area around Ossining, New York.

The incidence of malignancy around the Ossining area is about ten times as high as most areas in the United States, and it compares to that of northern New Jersey.

Northern New Jersey is a very highly industrialized area. We have emissions from cracking plants, refineries, electric plants, and various industrial complexes.

We have always thought that this would be a favorable area for the development of malignancy, and time has proven it has.

However, lately we have had several cases of leukemia in a very small district, and the health authorities haven't been able to put their finger on it. We're very suspicious, but we cannot exactly prove it.

Now, in the area around Ossining, the factors are entirely different. The area around Ossining in Westchester County is not industrialized, but the soil around there is highly radioactive, and it has been like that for centuries.

At first the public in the Ossining area tried to blame a lot of this high incidence of malignancy on Con-Edison's nuclear power plant, but that has been entirely disproved.

The point I wish to make is that with this phosphate mining and the radioactive contamination, not only of the drinking water, but of the air, you may reach a stage where it would be impossible for most of the people to live here or want to live here.

Now, we had an example of this about eight or ten years ago when it was discovered that the inhalation of asbestos fibers would produce lung malignancies and malignancies of the abdomen, anywhere from five to thirty years after these fibers were inhaled.

We know from our experiences with radioactive substances that the time between the exposure to radiation and the development of malignancies can be anywhere from one month to twenty or thirty years.

As a matter of fact, the incidence of malignancies among X-ray men is ten times as high among just ordinary physicians not involved with a great deal of X-ray work.

And that is what I want to emphasize. You're actually playing with fire. You're developing a high incidence of radiation, both in the water that you drink and in the air that you inhale.

That's all I wanted to say. Thank you.

(Applause).

MR. TRAINA: Thank you very much, Dr. Rosen, for taking the time. I think those comments are very, very significant.

Homer Greer?

MR. GREER:

I'm Homer Greer. I live at 350 Northshore

Road, Longboat Key. My first year in Manatee County was in 1920 when no one, even the farmers, or anyone in the community visualized anything pertaining to phosphate or phosphate mining.

I want to give each one of you men a preparation we prepared for one of our local papers consisting of twenty pages pertaining to phosphate mining.

I don't think you had an opportunity to see it. Therefore, I'd like for you to read it when you have time.

MR. TRAINA: I did have an opportunity, and I'll tell you, it beats the heck out of government publications, and it's very well written.

MR. GREER: Thank you kindly; I appreciate it. I didn't write it.

MR. TRAINA: Whoever did should be complimented.

MR. GREER:

I'm particularly concerned about Manatee County, because this is where I live, and this is the area which I intend to live for the next twenty years. I'm only seventy-seven, so I see some of you fellows may be gone before I am.

But as a matter of fact, I wanted to show you the area pertaining to the phosphate mining in Manatee County. I wanted to show you the area the various phosphate mining companies own in Manatee County.

In the county itself, we have approximately 500,000 acres of land, and the phosphate companies in their entirety own 103,000 acres.

As you can see, this particular area here is 43,000 acres owned by W.R. Grace. They also own another 11,000 acres up at the northern edge of the county bordering on Hillsborough County.

Then the other companies here are Swift, Continental Oil, US, the Becker Phosphate Company, the First National Bank.

Down in the corner is the IMC company and the Phillips Company, and then here is our Lake Manatee with the tributaries coming throughout this area.

Here is the Gardinier plant.

This is the Florida Power and Light plant.

This is the Borden plant, which is existing at the present time.

This is Port Manatee.

This is a new area that will be occupied by the Allis company and the Simons company when they get it in operation.

This is the Manatee County Utility Company.

Clear down in the lower part of the county here is Myakka State Park.

The major important factor, as I see it, pertaining to phosphate mining is the fact that if all these companies start mining at one particular time or near one particular time, as Ms. Rains told you, they would use approximately 94 million gallons of fresh water daily.

And when you think of this use of fresh water compared to the fact that our new planning department operating in Manatee County say that in the next twenty to twenty-five years, we will have a total of 200,000 people living in Manatee County ---

At present there are around 65,000 people living here, so as these companies begin to mine, if the slime should get away from them, either through heavy rainfall or through the loss or the break of one of the dams, our tributaries to the Manatee County River, where we get all our drinking water, would be so polluted that it would be impossible for us to have drinking water.

T-30

In addition to that, if in the lower part of the state, you should have a slime spill, then the Myakka River would completely destroy Myakka State Park and all of the vegetation and the life in the river, as well as the life around the river.

Now, in the pictures that we saw a while ago that were shown by the EPA organization, it showed

1-96

that there was trees and vegetation growing along land which presumably had been worked over or reclaimed by the phosphate company, but they didn't tell you that only a short length of time back, the Peace River was completely devastated by slime phosphate, and the animal life or the fishing life in the river was completely destroyed.

I have flown over Hillsborough County, a great deal of Polk County, and as you saw the pictures that were represented or shown here earlier in the program, they showed big trees, pine trees, growing along, and they intimated, at least, that these were growing over reclaimed land.

Well, those pine trees must have been at least fifty to seventy-five years old, and in my flying over Hillsborough County and Polk County, I saw no vegetation or any trees of this type.

Now, it may be that these trees grew fifty or sixty years ago or even longer in some of the reclaimed land. That I cannot disprove.

But in asking and checking with the Corps of Engineers and the mining interests, mining department for the State of Florida, about a year ago, they told me that they had no realization or no idea of how many acres of land had been mined in the State of Florida, how much was being mined in the State of Florida, and no idea of how much land had been reclaimed.

Therefore, I'm very skeptical about the pictures that were shown showing these very, very large trees.

In the past I've seen pictures showing fattened cattle walking around on land that had been reclaimed, and recently I had one of the people living right out here in the edge of Hillsborough County where the cattle begin to go down physically.

T-31

They had vets come in and check their cattle and, because of the pollution of the grass, the cattle had lost all of their teeth, and they had to dispose of their entire herd before they died.

These are actual facts and not hearsay.

I'm also very much concerned about what will happen to we people here in the county, as time goes on, if all of these people or all of these phosphate companies are allowed to mine.

The money that they use or make from the mining process is not retained in Manatee County. Almost in its entirety it's taken out of the county and out of the state.

So we, as individuals within the county, have no benefit, with the exception of a small group of people.

1-98

It's an established fact that one mining operation actually hired twelve men in a twenty-four-hour period, twelve men; the salary of twelve men is comparatively small.

T-32

All of the rest of the operation of these companies, as they would operate, is a mechanical operation, and I don't like to have companies of any kind or people of any kind, including the EPA, insinuate that we are going to have a mess of capital brought into our county or our community and it will remain here or stay here because, as a matter of fact, that is not true, and I wish to thank you very, very kindly for your interest and your allowing me to speak.

MR. TRAINA: Thank you, Mr. Greer.

(Applause)

MR. TRAINA: Mr. Greer, there's just one comment. As I understand the report, I presume all these areas are potential areas; they're not existing areas.

As I understand the report, it would not call for slime ponds.

MR. GREER: Well, at the present time ---

MR. TRAINA: As I understand the report, there would be no slime ponds associated with this new activity.

MR. GREER: Well, I can't say that there will be no slime ponds. I know at the present time there are large slime ponds.

Take the Borden plant, for example. They had purchased --- They have a large slime pond, and it's now at the present time about 40 feet --- The size of the bank is about 40 feet high, and they can go up to a 70-foot height in building up this bank.

I can't tell you exactly which one of the two companies, but one of the companies, they purchased all of the air rights in the surrounding community so nobody can bring suit against them.

In flying over the area, as I did, the citrus fruit was destroyed, either dying, or had been destroyed for miles back away from the present slime ponds.

There were no trees any place in existence, and I took this flight just a little over a year ago.

MR. TRAINA: I know they exist now, but the report deals with new sources and recommends that there be no slime ponds.

MR. GREER: Well, I'm very encouraged to have that kind of a recommendation, but I take facts as they exist today, not hopefully as they will exist twenty years from now.

MR. TRAINA: I understand, sir. Thank you very much, Mr. Greer.

(Applause)

Jean Russell?

MS. RUSSELL:

Greetings. I'm Jean Russell, Longboat Key, and I want to ask a question for one of the gals sitting there.

What is a new source?

MR. TRAINA: Okay. Let me describe it as unlegally as I can. Under the Federal Water Pollution Control Act, there are different requirements for existing sources and new sources, and if the source is determined to be new under those requirements, then the recommendations contained in this report would apply to that source, and all the things with regard to elimination of slime ponds, and all the other items that Mr. McNeill talked about, would apply to any permit issued to that facility, because it is a new source.

MS. RUSSELL: Okay. I wanted to ask you, who provided the pictures of all the great things the phosphate company has done, like the clean Peace River, and reclamation and the cattle grazing?

MR. TRAINA: Well, Ms. Russell, I don't know who provided those, but you have comments to make on them?

MS. RUSSELL: I don't. Honestly, we are so terribly worried here, and I know your requirements; as

Mr. White told me, you can just go by the requirements that the law states, but you do not have to put on those pictures for the rest of us who are so terribly, terribly concerned.

I do think it's biased, don't you, a little bit?

(Applause)

You don't see a picture of that Peace River where the effects of that went for a hundred miles, and the things all the others have touched on, and I'm not going to keep these darling people here by yakking, but I don't think you're being very fair to us.

Please don't do it again.

(Applause)

MR. TRAINA: Thank you.

Catherine Fernald?

MS. FERNALD:

I'm Catherine Fernald. My husband and I have lived on Longboat Key and owned property since 1965. We've been interested in this area for a long time.

T-33

As a taxpayer in Manatee County, I have a question for the EPA. Does EPA expect to address itself to the hidden cost of phosphate mining, the health, covered by lots of people, the water, the draw-downs, the salt water intrusion, the loss of potable water?

What will be the cost to transport water from the Suwannee River?

Air: The medical expense will be borne by the public when there's air pollution.

The subsidization by taxpayers of the State by the reduction of severance costs for phosphate shipping?

In regard to the slime pond, if Becker Phosphate is declared an existing source, then we are stuck with slime ponds in Manatee County, so this is another question.

T-34

MR. TRAINA: You're right.

MS. FERNALD: . .

As the environmental chairman for the Longboat Key Garden Club, I was part of the adjudicatory hearing before Judge Yost, and I felt very strongly that the judgment handed down by Mr. White of the EPA in Atlanta is completely unfair, and I'd certainly like to have a rehearing on the whole thing.

Thank you.

MR. TRAINA: Thank you.

(Applause)

MR. TRAINA: I just might comment on that list of items, Ms. Fernald, that there is provisions -- I'll be more happy to talk to you -- on how a decision of the Regional Administrator can be further reviewed by the

Administrator. Those administrative procedures do ---

MS. FERNALD: The big problem, sir, is that we are single citizens in this county, and the expenses of hiring attorneys and doing that is almost astronomical.

Large phosphate companies multiply and multiply the hearings and the hearings and the hearings and draw us down to no money, and somewhere in the government we ought to have someone who is ombudsman for us to take our side of the question, and we think you should be the ones to do that.

(Applause)

MR. TRAINA: Our eminent counsel would like to make a comment.

Mr. Phillips?

MR. PHILLIPS: Ms. Fernald, we appreciate the comment, and would mention that Sarasota County has appealed the regional decision to take orders, and they're now considering whether to grant that appeal.

MS. FERNALD: If you would, because it cost $800 already, if you can provide us with a little help of a lawyer, we'll be glad to do it as well.

MR. TRAINA: Thank you.

That concludes the list of the people that indicated on the cards that they would like to make a statement.

At this time I would ask if anybody else who has not made one would like to come forward and make a statement..

(No response)

Is there anyone who has made a statement who'd like to amplify or further comment?

MS. RAINS: We'd just like to thank you all for coming down.

MR. TRAINA: Mr. Carr?

MR. CARR: Just a question, Mr. Traina.

We're working with the areawide impact statement here tonight, and it will be followed by site-specific impact statements later. I'm not 100 percent sure how the areawide impact statement will relate to site-specific impact statements in terms of, say, permits and that kind of thing.

MR. TRAINA: Okay. Let me ask Mr. Hagan to comment on that. I think it's an appropriate comment. If I don't care for his comment, I might add some more to it.

(Laughter)

MR. HAGAN: Feel free. The areawide impact statement was designed to cover just that, the areawide impacts.

Were are trying here, through this process, to set forth policy guidance, which we can then apply to individual site-specific mines or chemical processing plants.

It is our intention to use this areawide impact statement as a policy direction for EPA. Hopefully, it will also be used as a policy direction by other federal agencies in guiding their actions, so that we can have a consistent federal, state, local approach to the regulatory processes that govern the phosphate industry.

Beyond the policy-setting activity, it will provide some administrative forum for satisfying the National Environmental Policy Act with respect to the individual impact statement.

However, the individuals, I think, will be much more specific in terms of impact on wildlife, impact on wetlands, and the particular pollution control requirements for each individual plant or mine as they're developed.

Do you want to add something?

MR. TRAINA: The only thing I'd like to add is the job that I have, as Director of Enforcement, I am responsible for issuing the permits, not only to the phosphate industry, but to any other industry, or any other point source, for that matter.

It certainly is my intent to follow very closely the guidance, if you will, that's in this document, and certainly to follow the individual EIS's with regard to specific recommendations as it relates to things like gyp ponds and slime ponds and meeting various federal, state and local emission limits, be they air or water.

I'm very much aware, as I think everyone here, including the industry, of the past, and I think this document --- I would like to think that this document represents at least a major turn in the way the federal EPA has been able to, or not able to, as the case may be, regulate this industry, and I don't need to comment in any great detail about the problems that the federal EPA has had in the past,

And we hope that with this document and the public reaction to it, and I do appreciate very much the public reaction tonight.

I look forward to getting it on Wednesday and Thursday night -- we are having two other meetings -- along with the written comments that come in to, maybe, turn a corner here.

We have had many opportunities that haven't been as optimal as this one is with regard to putting some direction, more direction, into controlling and regulating this industry.

As they say, as far as the NPDES permits and the other air -- as well as the other environmental areas that EPA gets involved in, the 404, although we do get involved in the review with the Corps of Engineers on that one, it's my intent to implement, not only the tone, but the actual recommendations of this document.

Are there any other comments?

Yes, sir?

MR. GREER: I just wanted to make one more statement, and that's to the fact the dear phosphate companies operating, or intending to operate in this community, have hired some very, very attractive little girls to go around through Manatee County and Sarasota County asking the public to sign statements they think phosphate mining in this community would be a very, very fine thing, and I wanted you to know that.

MR. TRAINA: Are there any members of the panel who'd like to make a comment?

(No response)

MR. TRAINA: Okay. I'd like to thank, on behalf of all of us here, EPA and the others who are involved with this study, thank you all for coming.

Let me just make a few closing things here.

The comment period, the written comment period, will be open until June 23rd, 1978. Anyone who would like to make some written comments or amplify what you've said tonight, please address those comments to John Hagan, Chief, EIS Branch, EPA, Region IV, 345 Courtland Street N.E., Atlanta, 30308.

As we indicated ---

MR. HAGAN: I have cards; if anyone would like a card to get the address correct, I have it.

MR. TRAINA: We will take the comments made tonight and any comments --- They will be addressed in the final EIS, which is scheduled for publication by July 31.

Again, thank you for coming, and the hearing is adjourned.

(Whereupon, the hearing was adjourned at 9:55 p.m.)

-oOo-

CERTIFICATE

This is to certify that the attached proceedings before THE ENVIRONMENTAL PROTECTION AGENCY, REGION IV in the Matter of:

Draft Environmental Impact Statement Public Hearing

Manatee Junior College
Bradenton, Florida

7:00 p.m.

May 22, 1978

were held as herein appears and that this is the original transcript for the file of the Agency.

Anne Japour
ANNE JAPOUR
Official Reporter

-o0o-

UNITED STATES OF AMERICA
ENVIRONMENTAL PROTECTION AGENCY
REGION IV

- x

A Public Hearing:

DRAFT AREAWIDE ENVIRONMENTAL IMPACT STATEMENT

CENTRAL FLORIDA PHOSPHATE INDUSTRY

March 1978

- x

Time: 7:00 p.m.

Date: May 24, 1978

Location: Bartow, Florida

-o0o-

1-111

APPEARANCES:

THE CHAIRMAN:

PAUL TRAINA
Director of the Enforcement Division
Environmental Protection Agency
Atlanta, Georgia

THE PANEL:

DR. MARVIN COLLINS
Florida Department of
Environmental Regulation
Tallahassee, Florida

BILL STOWASSER
Bureau of Mines
Department of Interior
Washington, D.C.

BILL PHILLIPS
Office of Regional Counsel
Environmental Protection Agency
Atlanta, Georgia

SPEAKER	PAGE
Linda Campbell	27
Homer Hooks	29
George Cornwell	41
E. Edward Holloway	62
B. J. Register	64
W. M. Leaders	69

1-113

P R O C E E D I N G S

(Whereupon, at 7:12 p.m. the hearing was called to order)

MR. TRAINA: The hearing is open.

Good evening, ladies and gentlemen. My name is Paul Traina, and I am Director of the Enforcement Division of the United States Environmental Protection Agency, Region IV, Atlanta, Georgia.

The Regional Administrator, Mr. John C. White, has designated me to run this hearing tonight.

I would like to introduce the other panel members with me.

On my far left is Dr. Marvin Collins. Dr. Collins is representing Mr. Jay Landers, who's the Secretary of the Florida Department of Environmental Regulation.

On my immediate left is Mr. John Hagan. Mr. Hagan is Director of the Environmental Impact Statement section of EPA in Atlanta.

On my far right is Mr. Bill Stowasser. Mr. Stowasser is with the Bureau of Mines. He's representing the Interior Department from Washington.

On my immediate right is Mr. Bill Phillips. Mr. Phillips is with our office of Regional Counsel with EPA in Atlanta.

Tonight's hearing is concerned with a two-year study on environmental, social and economic effects of continued expansion of the central Florida phosphate industry.

The purpose of the study is to comply with the National Environmental Policy Act of 1969.

Issuance of National Pollutant Discharge Elimination System permits for new sources of phosphate mining and chemical processing operations constitute a federal action which significantly affects the human environment.

As such, the National Environmental Policy Act requires development of an Environmental Impact Statement prior to an issuance of these NPDES permits.

It was determined in early 1976 the number of new phosphate operations which would request permit applications would make individual site-specific Environmental Impact Statements ineffective in determining areawide and cumulative effects.

Each individual study would determine effects of that particular operation, and areawide and cumulative effects might easily have been neglected.

For this reason, all new source permits were held in abeyance while the areawide EIS was developed.

A draft of the statement has been prepared, and notice of its availability was published in the Federal Register, Volume 43, dated April 21st, 1978.

The hearing tonight is for the purpose of receiving comments from the public on this draft Environmental Impact

Statement.

All substantive comments on this draft EIS will be considered by EPA and summarized and addressed in the final Environmental Impact Statement.

As stated on the agenda, we will begin with a brief presentation by EPA and the contractor of the study, Texas Instruments, to summarize the major conclusions of the draft EIS and how those conclusions were developed.

Those of you who have indicated on the registration card that you wish to make oral statements will be given an opportunity to do so.

At this point I'd like to call for Mr. Gene McNeill, who's the Project Manager of this study for EPA.

Mr. McNeill?

MR. MCNEILL: Thank you, Mr. Traina.

What we'll do next is just very briefly go through some of the highlights of the findings.

As Mr. Traina said, the main purpose of the hearing here tonight is to hear you, to give you the opportunity to make comments, make statements, regarding this draft EIS.

With that, I think I'll introduce the contractor, Texas Instruments, who was the prime contractor on this study, and they will briefly go through the findings in the draft EIS, and then I will summarize the proposed action.

Larry Bowles is Project Manager of Texas Instruments, the prime contractor on the study.

Larry?

MR. BOWLES: Thank you, Gene.

I'd like to introduce Audrey James, a member of our staff on the program, and Dr. Arnold Stalder, and Arnold will give the presentation this evening, so I'll turn the microphone over to him.

MR. STALDER: This evening, rather than summarize the results that are compounded and condensed in the draft EIS, which were founded on some 1,500 pages of documentation that preceded the draft EIS, I'm going to go through just briefly what it was we did when we prepared documentation to support the EPA in preparation of the EIS.

We were studying a seven-county area in central Florida, and you can see, outlined in there, the area that is mainly concerned with phosphate formations.

The larger circle includes the entire Bone Valley formation; the smaller loop to the north, which includes the gray shaded areas, which depict currently the mine or past mine phosphate industry activities, is the area of the highest grade ore.

The larger area, which includes the gray hatched regions to the south, is the area of lesser grade ore, which the phosphate industry is now proposed to move into.

Those areas, which are gray hatched, are those which

1-117

had permit applications submitted to the Florida DER.

If you look at it in a topographic relief, you can find that the study area includes the Polk uplands, and you'll find that there's a ridge in the south edge of this, and this area is the area where the primary activity of the phosphate industry has been in the past year.

If you drop on down to the area in DeSoto and Hardee County, you'll find another slight drop in the topographical relief, as this area seems to afford the next best chance to move phosphate from the ground from these deposits.

The study area also included the Charlotte Harbor area and the Tampa Bay area.

Ground rules for Texas Instruments are summarized in the next three slides.

We were to use existing data; that is, data that had been prepared by the phosphate companies for DRI's, data that had been documented and published in one form or another on the study area for various and sundry reasons.

We were to receive help from EPA, Bureau of Mines, USGS, and various and sundry federal agencies, the Florida DER, SWFMD, and regional planning councils to provide data to support the documentation on this EIS.

EPA was specifically furnished material on laws and regulations, industry descriptions, water quality and air quality.

EPA was also to assist and perform studies and reports on radiation as it pertains to the phosphate industry activities in central Florida.

USGS was to provide their Floridan Aquifer model to protect the impacts from the phosphate industry on the Floridan Aquifer.

The Fish and Wildlife Service was to furnish a wildlife inventory and distribution data, which in fact they did by performing an independent study, which was then supplied to Texas Instruments and incorporated into the documentation which we supplied EPA.

Bureau of Mines furnished reserves, demands, production data on the phosphate industry, and population projections were based on University of Florida estimates.

There were two committees involved in this project: the steering committee that was formed of federal agencies, Bureau of Mines, EPA, Council on Environmental Quality, and several others, Corps of Engineers, and the Florida DER -- not a federal agency -- provided the primary direction for this study, and there was an advisory committee that consisted of representatives of the counties, Florida DER, and environmental groups in the Florida area, who are quite specifically affected by phosphate industry activity, by their influence throughout the course of this study.

The object of this was to review five alternatives

1-119

that were depicted by the steering committee and review the relative effects of the alternatives.

The effects assessments methodology was to address a series of decision indicators. Decision indicators, in this case, were possible effects on air quality, ground water quality, water supply, and so forth.

They were outlined by the steering committee, and the priorities with which these were to be considered were set up by the steering committee,and were somewhat limited in certain cases by money limitations.

There were quite a few questions raised that couldn't be answered completely based on existing data. In that case, priorities were set by the steering committee, which will be addressed specifically.

We were to assist EPA in the preparation of the draft EIS and help to address comments on this draft EIS in preparation for the final Environmental Impact Statement.

To perform this service, we consulted with several people, who are quite familiar with specifics in the Florida area:

Dr. James Nicholas on socioeconomics; Dr. Paul Urone, University of Florida, an air quality chemist; Dr. Eric Rifkin, on ecology and general effects; and Geraghty and Miller, Peter Schroeder with Geraghty and Miller for hydrogeology, primarily ground water quantity; and Tomasino and

Associates, Sam Lockwood with that organization, to help us flesh out the scenario description and discuss surface water.

We were to forecast resources and demands in the area to the year 2000. This involved the phosphate industry and other demands on water supplies, land use, and so forth.

Baseline data and regulations, for the most part, were those that existed on 1 August '76, the starting point for this contract.

We were to prepare preliminary findings in the form of working papers, which would be distributed and disseminated such that both the advisory committee, the steering committee, and the general population of the area could see them and comment upon them and get their inputs in before the Environmental Impact Statement was prepared.

And the integrating theme for the whole project was, in effect, environmental land use planning, and there were some adjustments made to the data, and the land use data had not been projected out to the year 2000, and extrapolations from the distant data were made.

Data of the respective land use activities of the phosphate were acquired through a land use questionnaire, which was submitted to the individual phosphate companies, who then responded, and this information was incorporated into the EIS.

The Corps of Engineers regulations concerning wetlands, which were finalized 1 September '77, which is an exception to the 1 August '76 rule with regard to regulations, were considered in the preparation of this document.

And all phosphate operations that had not been permitted prior to 1 August '76 were, for purposes of this documentation, considered new sources.

We looked at two points in time: the year 2000 and then, based on phosphate production in the country and in the Florida area, there's a peak around 1985; we looked at the short term, 1985, and then again at the year 2000 in reviewing effects.

What we have here is a list of the operators in the area. Above the first break are those existing mining operations in the central Florida area.

The next small bunch are, with the exception of USS Agri-Chem, those which have submitted DRI's by 1 August '76. USS Agri-Chem was added to this section, because their obligation appeared to be imminent.

The list on the bottom, and if you kind of slide up the scale and look with regard to the top, production is estimated to stay at nearly a constant level. Most of the activity at the top dies out by the year 1985, and you'll find that between the new batch and those at the bottom, it would tend to continue production at nearly a constant rate, moving the mining activity from the Polk County area south then, as the reserve depleted in the northern area.

The information that we got, the data that we got, came from a bunch of sources, and we'll go over examples of some.

Air quality data we got through Dr. Paul Urone and Chadbourne, one of his colleagues. This data was basically data supplied by the Florida DER.

There's some more air quality data, in this case, concerned with fluorides, fluoride emissions. Data on fluoride was supplied by the Florida DER, the Winter Haven lab.

We also have some air quality data from the phosphate industry. We got data from the USGS, in this case potentiometric surface maps, in addition to the aquifer model.

We got data from the Army Corps of Engineers in regard to chemical types of water.

We got data from the planning councils, Tampa Bay, and Central Florida Planning Council, Southwest Florida Regional Planning Council, and this is another long list of water quality data pertaining to industry discharges, and this was obtained from the Florida DER.

During the course of our operations, we got quite a bit of data, literature-type data, We also went out and did some field surveys, primarily our biologists and socio economists, and we took pictures of various aspects of industry activity and general activity in the central Florida area.

This, for those of you who haven't been around, is obviously a drag line strip mining phosphate.

This is a beneficiation plant, and this is a chemical processing plant to make chemical fertilizers out of phosphate rock.

This is a very old mined-out area that's been abandoned, left alone, and re-vegetated naturally.

This is a slime pond that is part of the dewatered area. On the right is where it dried out. To the left there is still water; it hasn't evaporated.

Part of some of the area that has been mined and/or used for slime disposal areas, been turned into a sanctuary, the Tenoroc Wildlife Sanctuary.

This is inside the sanctuary. This is a slime pond that has naturally de-watered and re-vegetated.

This has been reclaimed and turned into a recreation park. There's a ball park in the background, and an area that has been re-grassed in the foreground.

This is the primary use of reclaimed land, today, anyhow. A great quantity of it has been turned into approved pasture land.

This is some of the natural environment. This is a scrub pine bush.

That's a hammock.

This is a pasture land.

This is a sometimes wetland in the rainy season.

A forest area ---

This is a natural pasture land that's been approved as being farm land or vegetative.

This is a crop land area, truck farm-type crops, and this one is most obvious in the Florida area, citrus groves.

This is the Peace River, I believe and this is the Tampa Bay area with our Gardinier plant in the background and a park in the foreground.

This is another form of the environment in the area, which is a developed coastline area.

During the process of developing documentation, which is also about 1,700 pages, between the working papers and the draft EIS, we attempted to have things that were distributed to the public to be as plain as possible.

We didn't always make it completely. There have been comments, and there have been corrections, and we do have a table on the next slide which will be added to the final EIS and will clear up some questions that might arise in this ecological section.

MR. TRAINA: Well, Mr. Bowles let me just comment; today I took a helicopter ride over this area, Polk County, and I would have to agree with the woman the other night at the other hearing, that you might have gotten some more representative pictures of the area.

It wasn't till I saw today that I realized the full impact, at least in Polk County, of some of these activities.

Mr. McNeill?

MR. MCNEILL: Before I get into the proposed action, I'd like to make a few introductions.

I already mentioned we had an advisory committee which consisted of representatives from each county in the study area, a representative from the Southwest Water Management District, an industry representative, and a represenative of the Florida environmentalist groups.

I think, just thumbing through the cards, I might have missed somebody, but I'm sure three of them are here tonight, members of our advisory committee.

Mr. Homer Hooks, would you stand for a second?

He represented the industry as the President of the Florida Phosphate Council.

Barbara Boatwright?

Oh, there she is. She was advisory committee representative for the Southwest Florida Water Management District.

And Archie Carr is here.

He was here. There he is outside. He and Charles Lee took turns representing the Florida Audubon -- representing

1-126

the Florida environmentalist groups on the advisory committee.

There are a few others here who have been a tremendous help, and, I'm not sure, after some of the comments we may get tonight, they may not want to admit having helped, but I want to thank them anyway.

One, I see Bill Wilson from the USGS from Tampa is here. That office was a tremendous help in supplying information regarding the effect on the changing potentiometric surface of the Floridan Aquifer.

Dan Williams from DER: Dan was in the Winter Haven office, one of the slides that were mentioned. We got quite a bit of data from the Winter Haven office. He's now in the Tampa DER office.

Otis Smith. Otis also was in the Winter Haven office of DER, and is now in Tampa.

And I see Bud Hendry, the state geologist, is here. Bud? He's also supplied us quite a bit of useful information.

Okay. What I'll do is very briefly -- and I mean it this time -- tonight go through what the proposed action is. A few of you were over in Bradenton the other night, and I got up and said I was going to briefly summarize the proposed action, and then I commenced to elaborate on quite a bit of detail.

Thumbing through the cards here, I think most of you

1-127

if not all of you here tonight, have been on our mailing list and received the working papers and our newsletter we put out all along, so I don't see any real need here tonight to go into much detail, so instead of that, I'll save most of the time for presentations from you.

I'm just going to hit the high spots of the proposed action and what we, up until the draft EIS, are calling the selected scenario.

First, for mining operations, any new source mining and beneficiation operations -- and when I say new source, I mean based on issuance of EPA NPDES discharge permits.

First, we say that, under this proposed action, any new source mine and beneficiation plants will eliminate rock-drying for rock to be processed into phosphoric acid in central Florida.

All of these that I'm reading off, there will be provisions for some exceptions, which would result during the site-specific environmental impact study.

I should mention here that any new source mine or new source chemical plant will have to do a site-specific EIS. This areawide draft has addressed areawide and cumulative effects of the entire industry, as it is projected, under this proposed action.

The second one, and again, I'm still talking just to mine and beneficiation operations, is to meet Florida's effluent limitations, which are more stringent than EPA's effluent limitations, but during the study, we found that meeting the Florida effluent limitations for mining operations would meet receiving water quality standards.

Third, eliminate conventional above-ground slime disposal areas.

Four, this one really is sort of a repeat, because we started out with meeting all existing local, county, regional and state requirements, the fourth one is to meet the Southwest Florida Water Management District requirements for the consumptive use permit.

We go, what may be a little beyond that, when we say, in the next one, to provide storage capacity for water recovered from slimes for re-use, which may, in some cases, result in a reduced pumping rate from the Floridan Aquifer, even moreso than meeting existing Southwest Florida Water Management District requirements.

Six really states to allow continued use of connector wells for de-watering the shallow ground water table prior to mining, but with precautions and adequate monitoring as provided by the industry and the state to protect ground water quality, to assure that the quality of the water drained from the shallow water table is adequate to be discharged directly into the Floridan Aquifer.

And seven, unfortunately EPA guidelines on radiation, on reclaimed land, has still not been completed. They were put out in draft form, but it will be published in the Federal Register in June, in two sets, part in June and part in July of this year. They'll be published in proposed and final form, so we'll be leaving the DEIS when these guidelines are finalized and adopted, and they will be met by the new source mining operations. And in all probability, they'll apply also to additional mines.

MR. TRAINA: Mr. McNeill, could you just, at this point, clarify what part of that particular recommendation --- Talk about the second part of that DRI for site-specific EIS. You also developed a recommendation plan which considers radiation of spoil material.

What did you have in mind, what did this report have in mind with regard to that recommendation?

MR. MCNEILL: Okay. We're saying that in the site-specific study, and it would have to be determined on a site-specific basis, based on core sampling of the soil and the material of the ozorten and the matrix.

The determination needs to be made on methods of reclamation to minimize radiological material remaining near the surface.

As I say, it would have to be done in the site-specific study --

MR. TRAINA: This plan ---

1-130

MR. MCNEILL: -- to have mining and reclamation methods which would allow the overburden to be placed back in such a manner that the top three or four feet of the soil or material would not contain the radionuclide material there in the strata.

MR. TRAINA: Thank you.

MR. MCNEILL: We have been asked --- Some comments have been made that we need more detail, and just how we would go about doing that.

It would have to be done on a site-specific study at a given site, mining site, based on core tests and analysis of radionuclides in the samples prior to establishment of mining and reclamation plans.

Okay. The next one is to meet existing county and state requirements. Again, that's repetitive; that was given on reclamation.

Plus, we're asking, in the site-specific study, that a determination is made on existing wildlife habitat on the mine site and in surrounding areas in the site-specific study and the mining and reclamation plan have provisions for protecting wildlife habitat, existing wildlife and wildlife habitat.

And the next one is to provide for protection and/or restoration of wetlands, which falls under Section 404 of the Federal Water Pollution Control Act, and also for water from mining and beneficiation operations.

Under our projected scenario, we're stating, where we project effects, we're stating that there will be no new source chemical plants in the study area.

This is based on information we've gotten from the industry, plus other information which indicates the chemical processing capacity that is needed, as long as mining will occur in this area, that the chemical processing capacity is already here; no new capacity is projected to be needed.

However, you know, there's no way to assure that someone won't tomorrow request a permit for constructing a new chemical plant, so we, as I say, under the scenario, we're not projecting any new chemical plant, but we do in the proposed action list requirements for any new chemical plant operation, which would require a new source NPDES permit.

The first one, which I don't have exactly in the order that they are in the EIS --- I'm going to clarify a couple of points a little bit.

The first one I have listed here is to meet existing standards of performance for new sources for air emissions. But in addition to that, either recover fluorides or provide for control of fluoride levels in gyp ponds to assure that fluoride emissions from the entire plant complex don't exceed allowable fluoride emissions from the plant complex.

And this would include gyp pond emissions. This, of course, would have to be determined in a site-specific study, as to what levels of fluorides would be allowed from gyp ponds.

The second one is, also on water, we say to meet existing standards of performance for new sources, and in addition to that, we say provide for recirculation of non-processed, as well as processed water, and to provide the same surge capacity for non-processed water that is required for processed water for new sources.

And we're further stating that, during times, during rainfall events when that surge capacity is exceeding and treated discharge is required, that, in all probability, more stringent or more concentrations of the pollutants will be necessary to protect receiving waters into Tampa Bay and the Peace basins than are listed in the current EPA effluent guidelines for new sources.

The third one is to provide for lining the gyp ponds with an impervious substance, unless it can be demonstrated in the site-specific study that lining is not needed to protect ground water quality.

And then the last one, we're saying encourage recovery of uranium under current marketing conditions. This definitely will be done, even if most, if not all of the existing chemical plants in central Florida right now are either in the planning, design, construction or operation stages of uranium recovery processes from the phosphoric acid.

MR. TRAINA: Excuse me. Let me ask you one another question. With regard to the items on fluoride and uranium recovery, is it the intent here of the document to have the source address those two items in the site-specific EIS's?

MR. MCNEILL: Yes.

MR. TRAINA: From an economic standpoint, they would have to address both fluoride and uranium?

MR. MCNEILL: Uranium recovery, right.

MR. TRAINA: Thank you.

MR. MCNEILL: Okay. With that, as I say, just a brief summary of the proposed action, I'll turn it back over to Mr. Traina.

As far as what we're saying, it is indeed the most important part of the hearing tonight, to hear comments from you.

MR. TRAINA: Thank you, Mr. McNeill.

Before we get on to the next part of the program, and the most important part, I would like to make a few comments with regard to public participation.

Not only is it the agency policy to involve the public,

1-134

frankly, it's a legislative requirement; it's in the law, Both the Federal Water Pollution Control Act, the Clean Air Act, as well as the National Environmental Policy Act, have provisions in there that there will be public participation in a host of activities that the agency undertakes, not the least of which is this activity tonight involving development of impact statements, so if you want to look at it --- You have an obligation under the law, if you will, to come forward tonight and express yourself publicly.

We would like to say that the hearing is being conducted pursuant to regulations that EPA's put out, and those regulations call for other things, that notice of the hearing be put in the local press, and we had notice of this public hearing published in the Sarasota Herald-Tribune on May 8th, 20th and 21st; and the Tampa Tribune and Lakeland Ledger on May 7th and 21st, 1978.

In addition to those notices, copies of the public notice were mailed to each of the individuals or organizations on our EPA mailing list, as well as to all the local, state and federal agencies involved.

I would ask at this point that those of you that haven't yet done so, fill out a registration card, especially if you want to speak tonight. There's a place on that card to indicate that you'd like to be a speaker.

1-135

Also on the card is indicated if you'd like to be on the EPA mailing list to receive, not only the final results of these proceedings, but any other activities that EPA is conducting in this area. There's a place to put yourself on our mailing list, and we would ask that all of you fill out a card so that we'll know who was here tonight and also who we would notify with regard to the final EIS on the subject.

The hearing will be from here on, as it has been, conducted informally. There are no rules of evidence. We ask that as you come up to identify yourself and the organization, if any, that you represent.

If you have written statements, I'd appreciate receiving a copy so we can give it to our court recorder. This meeting is being recorded tonight. The transcript of it will be available in our offices in Atlanta, and I believe at the office in Tallahassee, but certainly in Atlanta, and you can make your arrangements with the court recorder if you'd like to get a more immediate copy.

Okay. I would like to now call on Linda Campbell.

MS. CAMPBELL:

I'm here to present a statement relative to the Draft Areawide Environmental Impact Statement on behalf of the Florida Chapter of the Wildlife Society, a group of professional wildlife biologists in this state.

We have always been interested in wildland areas and we are particularly concerned about landscape alterations and reclamation associated ---

(Whereupon, the proceedings were interrupted for an acoustical adjustment)

MR. TRAINA: I'm sorry to disturb you. Could you start again, please?

MS. CAMPBELL:

I'm here to present a statement relative to the Draft Areawide Environmental Impact Statement on behalf of the Florida Chapter of the Wildlife Society, a group of professional wildlife biologists in this state.

We have always been interested in wildland areas and we are particularly concerned about landscape alterations and reclamation associated with phosphate mining in Florida.

We will submit a written statement for your consideration prior to the June 23rd, 1978, deadline, but we would also like to take this opportunity to publicly comment on this report.

Basically, we are concerned about the lack of a thorough discussion of the impacts of phosphate mining on fish and wildlife habitats. Throughout the report there are references to the relative value of various habitat types without reference to the source of this information or value judgment.

With the exception of a statement like "high habitat diversity supports a diversity of wildlife," it is very misleading and inappropriate to indicate that a particular habitat type has high or low value as wildlife habitat.

Another related point is that above ground slime ponds do have value as wildlife habitats and add to landscape diversity, but discussion of these benefits are minimal in the report.

As professional wildlife biologists, we support the concept that above ground slime ponds are beneficial to wildlife, particularly wetland species, and we discourage the total elimination of these areas.

We would also like to see changes in the current state regulations, which would allow shallower slopes along edges resulting in wider littoral zones.

Finally, we would like to see more consideration given to fish and wildlife in your criteria for wetlands restoration.

As stated on page 2.34 of the report, good wetlands restoration has yet to be demonstrated and we agree with this statement.

We strongly support the need for further research into restoration of fish and wildlife habitats on phosphate mined lands.

In summary, we are disappointed in the report as it fails to provide a comprehensive, objective, full disclosure assessment of the impact of phosphate industry activities on fish and wildlife habitats.

Thank you for your attention.

MR. TRAINA: Thank you, Ms. Campbell.

Homer Hooks?

MR. HOOKS:

Thank you, Mr. Traina.

My name is Homer Hooks. I'm President of the Florida Phosphate Council. I appear here tonight on behalf of the following companies:

Agrico Chemical Company; Borden, Incorporated; Brewster Phosphates; Conserv; Electro-Phos Corporation; Farmland Industries; Freeport Phosphate Mining Company; Gardinier; W.R. Grace and Company; International Minerals and Chemical Corporation; Mississippi Chemical Corporation; Mobil Chemical Company; Occidental Chemical Company; Royster Company; Stauffer Chemical Company; Swift Agricultural Chemicals Corporation; T/A Minerals Corporation; and USS Agri-Chemicals.

Before proceeding in my comments, Mr. Traina, and gentlemen, I have some good news for all the people of

Polk County and, indeed, central Florida.

I was advised late this afternoon that the State Senate today passed by a vote of 35 to 0 the land reclamation act, bill, which was before them and which is the product of the Land Reclamation Study Commission appointed by the Governor.

Mr. Bud Hendry, who was here, was Chairman. I think we all be gratified at this overwhelming passage of this legislation which, incidentally, was jointly supported by the Audubon Society, the Florida Phosphate Council, many others, the Governor, because I think it once and for all assures the ultimate and expeditious reclamation of the old lands about which we've had so much problems through the years.

Further, it sets up an institute of phosphate research for the first time in the history of this state, which will permit long range, basic, and applied research to be conducted on a very sound and scientific basis.for this industry, and I think we're all pleased about the passage of this legislation, which now goes to the Governor for his signature.

I'll be very brief in these comments. It will be followed by submission of a more detailed written statement for inclusion in your record.

Perhaps a brief bit of history to get us to

1-140

get us to where we are: On March 4, 1976, you will recall that President Ford instructed the Council on Economic Quality to conduct this survey, this study.

At that time, the Florida Phosphate Council strenuously opposed the expenditure of public funds for this study on three grounds:

First, we contended that there was sufficient information and data available through the DRI process and otherwise which, upon collation, would provide the information needed for this kind of interdisciplinary analysis of the impact of the phosphate industry in central Florida in the seven-county area.

Secondly, we argued that there was already sufficient enforcement and permitting authority at all levels of government, federal down to municipal, to sufficiently protect and safeguard the interest of the public and the environmental impacts of phosphate mining.

Third, we argued that this would, in effect, impose a de facto moratorium on the beginning of new phosphate mining, which was badly needed.

We were overruled. The order was given to proceed with the study. We cooperated in good faith with it.

Two years and 1 million dollars later, we now have the draft Environmental Impact Statement before us.

We have participated actively, as I indicated, on the advisory committee. I personally have attended every meeting of that committee, and I think only Bucky down in Punta Gorda has been to all of them as well.

We've reviewed thirteen working papers and five scenarios and given very close attention at all steps of the process.

What is the draft EIS we now have? We've been told repeatedly by EPA that it is essentially a guide, a report on the anticipated impacts of mining for use by EPA and other permitting authorities; in effect, an effort to balance the effects, primarily environmental, but taking into account, as well, socio-economic, balancing the effects of these influences of phosphate mining on the area, not to be considered a fixed and rigid regulatory document.

The proposed action section, which appears on 1.70 to 1.72 in the draft, is a synthesis or an evaluation of what kinds of steps appear desirable to achieve this balance of effects.

And we feel very strongly that through all this, we must keep in mind that the bottom line is the site-specific EIS. This is where the final judgment must be made on the application of a particular mining site, on the particular environment of that area.

So we approach an analysis of this document on two levels; first, the draft EIS itself; secondly, the proposed action.

Now, we've done this, I think, in a very systematic and careful way. We submitted these documents to a panel of consultants, one of whom will speak to you tonight, Dr. Lester G. Bromwell, whose major projects have included earth dams, hydraulic fills, dredge material, excavation, cofferdams, strip mining, mining waste disposal, has headed up the industry's solid waste clays disposal project;

Dr. George W. Cornwell, head of Eco Impact, Gainesville, an acknowledged international authority in aquatic ecosystems, ornithology and wildlife management; much of his experience involves assessing environmental impacts and regional resource planning;

Also Dr. Henry Fishkind, Assistant Professor of the Department of Economics, at the University of Florida, who has investigated the socioeconomic aspect of the EIS. He's done consulting work for the Florida Defenders of the Environment, Environmental Science and Engineering, Florida Sugar Cane League, and the State of Florida;

Benjamin W. Breedlove, presently a consultant

1-143

with Breedlove and Associates in Gainesville, specializing in aquatic ecology, terrestrial ecology, water quality analysis, ecosystem energy modeling;

And Gordon F. Palm of Lakeland, who is a specialist in plant design, start of construction, expansion, modernization, control of air and stream, pollution control, and solid waste disposal.

Now, I cite these gentlemen simply to indicate the credibility and the kind of people who have reviewed these documents, and they've done it thoroughly.

In addition to them, we've submitted the documents to our own overview committee, Mr. C.A. Campbell of International Minerals and Chemical; Mr. Jene Terry of W.R. Grace; Mr. Richard Murphy of Farmland; Mr. Bruce Galloway of Borden; Mr. Spencer Roberts of Mississippi Chemical; and Mr. Dick Timberlake of Brewster Phosphates.

So that very careful review had a very high level of expertise.

Now, as to the draft EIS, we find some very favorable comments in it, and I want to be sure that I single them out lest anyone allege that we're only here to attack the product, because we're not.

Additionally, increasing numbers of phosphate pits have recreational potential if properly reclaimed, and many have been transformed into private and/or public fish management areas and parks.

Going further in the draft EIS, a significant beneficial effect on fresh water sport and commercial fisheries will be the increased acreages of surface water resulting from reclamation of mining pits.

This additional surface water represents significant potential for establishing good commercial and recreational fisheries.

Local alterations of the flow regimes of three major rivers, the Peace, Alafia, and Little Manatee, will be minor and obscure to normal flow variations.

Minimal impact has been assigned to slime placement, since the ponds temporarily support a variety of wildlife and since terrestrial habitat eventually will develop or be reclaimed in the slime areas.

Several abandoned slime areas are now used as wildlife sanctuaries.

Also not necessarily advantageous is the elimination of the relief of slime pond embankments. Actually, vegetational zonation associated with these slopes is more desirable for a terrestrial bayou.

Finally, land use plans must reflect needs projected beyond reclamation and incorporate fish and wildlife values by leaving some pits for reclamation by natural processes and by insuring a mixture of surface water and storage, meandering streams, vegetative flood plains and forested uplands.

However, beyond these citations, we find several errors of fact and conclusion in the draft EIS, which will be addressed specifically in the written comment which will follow.

The important thing is, in our judgment, that if this draft EIS is to be used, as it has been described to us,it will be used, as a guide to be interpreted by other enforcing agencies, it must be an accurate and scientifically defensible document, because these agencies who will be using this as a guide have not been privy to the evolution of the scenario or examination of the working papers.

Therefore, it's very important in our judgment that the draft EIS, and certainly the final EIS, be scientifically accurate and defensible.

And it's our purpose, in the submission of our comments, to make it so.

Now, as to the proposed action, let me say at the outset that we're gratified that EPA's conclusion is that phosphate mining ought to be allowed to continue and expand to meet US and world demand for fertilizer and food.

I must say at this point that EPA's conclusion is not popular with many people, as we heard in Bradenton Monday night, but it should at long last put to rest the fears raised at the inception of this study and repeated again and again as to, for instance, the quantity of water, which EPA finds to be adequate with no new restraints necessary. Radiation is well within tolerances.

Reserves appear to be adequate; hence, permission to go forward with expanded mining. Air and water pollutants are manageable and under control.

Temporary disturbance of land which, incidentally, is projected to be 2.8 percent of the total land area in the seven-county study area, is just that -- temporary, and that reclamation requirements are adequate at all levels of government to restore the land, although the draft, I must say, in some cases implies destruction of the land.

And finally, the economic vitality of this industry is recognized in the proposed action, the 61,000 employees, the $2 million annually put into the state's economy.

We recently conducted a survey of the thirteen proposed mine sites. We find that these are not net figures for the whole industry, but they're real numbers of what these proposed mines mean economically to the state and the nation.

They will provide 3,000 new construction jobs, a financial payroll of $8 million. They will provide 3,200 permanent operating jobs with an annual payroll of $64 million.

And taken altogether, they will put $545 million annually in the state's economy for goods and services, so this is what we're talking about, really, in terms of expansion of the industry economically.

The application of the guidelines in the proposed action should be flexible enough to take into account the special considerations of the specific site.

Now, that's pointed up in two specific areas of the proposed action that I want to describe very briefly, that give us great concern.

And here again, we underscore the common sense need for local site judgment. First, the elimination of conventional above ground slime disposal areas; and secondly, the wetlands provisions.

With respect to minimizing the need for slime ponds, the industry and the US Bureau of Mines have been involved together in a project to accomplish this since 1972 at a cost of $1,650,000 to the industry and $385,000 to the federal government.

It is sure to be addressed by the new phosphate research institute, which passed the legislature today. We are firmly committed to solving this problem, but the vast differences between soil types of the percentage of clays in the matrix from one mine to the other, making uniform technology impossible, or at least unknown as of today.

Moreover, the industry's bureau of research has pointed us toward many new options for dealing with waste clays. These would allow a range of reclamation alternatives to optimize a good program for a single mine or for a larger area.

We would lose these options if we are forced, as the proposed action might prescribe, if interpreted that way, to place all clays below ground.

As a matter of fact, these clay ponds offer a potential for high-quality wetland sites, so this particular element of the proposed action will certainly require a specific evaluation of the local soil conditions at each site and flexibility to implement the best reclamation plan.

With respect to wetlands, I fear we are in danger of becoming emersed in emotional reactions before we have separately addressed the known scientific facts.

Similarly, the impact of mining on the habitat is fast getting bogged down in emotional overtones.

We fully share concern for protecting wetlands. Further, we are interested in how the valuable phosphate can be extracted from many wetland areas, and after mining, these wetlands can be restored.

As a matter of fact, phosphate mining offers the single greatest potential for significantly increasing the wetland acreage in the seven-county area.

We dispute the contrary implications that run through the draft EIS and the proposed action.

Dr. George Cornwell, with your permission, Mr. Traina, will follow me and elaborate particularly on the subject of the wetlands and on the habitat.

MR. TRAINA: Thank you.

Can I just ask you --- You addressed two items that the council of the companies you represented objected to. Does that assume that the other part of the scenario that Mr. McNeill reviewed is not objectionable to the industry?

MR. HOOKS: We will have more detail, comment, in our written statement. These, I would say, highlight those matters that we wanted to call your particular attention to tonight.

MR. TRAINA: For instance, the elimination of rock drying, is that ---

MR. HOOKS: We have no comment on that at this time.

1-150

MR. TRAINA: I see. Okay, thank you, Mr. Hooks.

Dr. Cornwell?

DR. CORNWELL:

Mr. Traina, gentlemen, I'm George Cornwell, I'm a wildlife biologist and president of Eco Impact, Inc., an ecological consulting firm in Gainesville, Florida.

I've been retained by the Florida Phosphate Council to review the draft impact statement, and in some fifty-five-page detail, comments on that document will be forthcoming to EPA shortly.

Just as background, I'd like to state I have worked in and with wetlands, from Alaska to Argentina, over the past twenty-five years.

I feel that wetlands and waterfall biology are my formal specialty. I've been much taken and at one time I held very firmly to the myth that phosphate mined lands are and by necessity had to be wastelands.

I was well conditioned to that belief, but I found over the years that nature very often provides ecological experiments for us to interpret and use, and it's definitely done that in Polk County.

The impressive, biological virtues of the naturally-restored mined lands in Polk County cannot be too often extolled, and I think it's unfortunate that the draft impact statement does not draw more heavily on that information base.

I note that Appendix C of the Archibald Biological Station study on this subject offered by John Edscorn is omitted entirely to this copy.

My own experience over the past several years has been to look quite closely at the Christinie site near Lakeland. In that site, there's a mesic hammock of very high diversity, about fifty years old, and I seriously doubt that most experienced Florida biologists in that community would recognize if they were standing on the banks of a slime pond.

It's most impressive of what nature can achieve when left to her own devices. I think most everybody in this area are familiar with Saddle Creek Park which again, although heavily used for recreation is substantially the way the mining left it.

Probably the least known site that could be looked at to reinforce this is the Tilghman mine southwest of Fort Meade. This was mined around 1910, 1920, and it has to me absolutely incredible diameters in the slash pine, oak trees, on that site.

I wouldn't be surprised if there's record specimens in the State of Florida therein, so as an applied ecologist, I ask myself why are these spectacular results occurring on mining lands, and I think a clue occurs in the impact statement, on page 1.16, which I'd like to read "Most soils of the study area are young and underdeveloped, nearly level or gently sloping, acidic, very sandy with high permeability, and generally low in clay, organic matter, and plant nutrients."

I think that's an accurate, precise statement of the unmined environment of much of the county.

Now, in the mine lands, those that have not been reclaimed into man-dominated systems, those that have been allowed to revert to nature, it seems to me several things happen.

First of all, you have the increased clays in the upper soil horizons, and these reduce permeability and make the soil conditions moister, which favor forest species, like those that came in on the slime pond at the Christinie site.

They also favor such wetlands as fresh water marshes, as our University of Florida wildlife graduate told you at the start of this hearing.

The second thing that happens is that a certain amount of phosphate matrix is left in the upper horizons within the root zone of the vegetation that comes in after mining.

It's been well established that most Florida forest communities are limited or starved for phosphate, and the application of rock phosphate to pine flatwoods is standard forest management procedure, so the mining accomplishes this.

A third thing that I think is very important to wildlife is that we have an increased variability in the topography and slope.

This provides both potential for more niches for a greater variety of species, and very importantly, better sanctuaries.

From human disturbances, probably the most lacking components of wildlife habitats in Florida is a place where they escape man.

And the mining land in Polk County is one of the few places where they can still do that, if they've not been reclaimed by man and not being used.

I'm sure there are other reasons. One that seems fairly evident, when you dig around in these sites, is that there's a surprising amount of humus accumulating in the eight varieties of soil; even ten years after abandonment and the soil is taken out, there's a very high percentage of humic material, and this is an index to biological productivity and speeds, the values that we're talking about here.

I think that, really, none of this kind of

1-154

analysis of material is in the draft statement, and I think the statement would be more useful, in terms of assessing restoration, if some analysis of this type was included.

I also think the lakes that occurred by accident, as abandoned mining pits, are badly misunderstood. Most of them have an excellent support fishery. The fishery biologists in this region often select them as their prime site for bass fishing.

Contrary to much opinion, many of them have good shorelines. They don't have as extensive a littoral zone as you would plan if you were going to re-dig them, but they do have very healthy and very productive shorelines, by and large, again a function of time since they were mined, and these shallow beaches of the shoreline become wetland systems associated with the aquatic systems and are highly productive.

Also I'm concerned about their depth being attacked. The life of Florida lakes and wetlands is often very short because they are so shallow, and they serve as nutrient traps, and the depth of the mining pits is a real asset in terms of both longevity of the lakes and in terms of ecological health.

And finally, before leaving lakes, I'd like to point out that the idea of restoring the pre-mining contour and filling the mine pits with clay and waste materials to grade level would eliminate a potential lake and wetland habitat area, and I think this is a serious loss in restoration potential and is, more or less, just a hangover of closed, strip mining thinking, where there's something hallowed about getting back to the pre-mining contour, which isn't always the case, and this points to why there has to be a site-specific restoration program.

My overall impression of natural-restored lands is one of increased diversity over most of the natural systems in the mining area and increased biological diversity over all the man-dominated systems.

Now, I think we should not lose sight of possibly 80 percent of the area consists of man-dominated systems.

The naturally-restored lands are extraordinarily high in the wildlife value, and particularly -- perhaps not of great importance to the biologists -- but particularly of the animal life that people value as part of their esthetic background.

I'm thinking of the harriers, the hawks and owls and eagles, or the wading birds, that have been the only predators, and incidentally the biggest rattlesnake that I ever walked within 6 inches of.

To my best knowledge, there is no spoken or written report of a decline of a plant or animal species in Polk County that a biologist has attributed to be the direct result of phosphate mining in the last eight years.

Certainly none is offered in the draft statement.

We have in Polk County a real, again, an experiment that's been going on a long time, and I think that if there are species that can be documented to have declined as a result of phosphate mining, the draft impact statement should point this out.

Now, I would like to turn to the central point of all this, which is the wetlands, and I must address in some depth the statement that occurs on page 2.34 of the draft impact statement.

It's a brief paragraph which I'll read so my comments can best be understood: "No feasible means -- " this is from the impact statement -- "No feasible means of restoring wetlands has been demonstrated, although reclamation can result in wet lands."

Now, here you see there's some real distinction between wetlands and wet lands, but that distinction has never been clarified biologically as to what the report has in mind as being different, one from the other.

"To restore wetland habitat in order to protect and propagate all the fish, shellfish and wildlife just listed --" and most of this page is a list of species, many of them species of marine animals and out in the open areas -- "To restore wetland habitat in order to protect and propagate all the fish, shellfish, and wildlife just listed would require management of variables needed for the creation of wetlands, which some believe occur only naturally over a period of approximately 4,000 years of natural processes."

And then a citation occurs which I'll refer to in a moment.

"Only nature can create a wetland," and the citation occurs again.

This paragraph, more than any other in the draft statement, brings into question the resource management aspect of the document, in my opinion.

It has been the human experience that if man, lake or landslide or whatever causes land to be wet long enough to sustain hydrophytic vegetation, which is a jargon term for aquatic plants, a weapon results.

The Department of Agriculture and Department of Interior had been urging and funding the construction of man-made wetlands for over fifty years.

The beaver is the only mammal in North America to make more wetland acres than man.

With built-in water management controls, man-made wetlands can exceed natural wetlands in productivity.

One USDA administrator estimated that 3.3 million of our ponds will have been constructed in the US by 1980, averaging about 1 acre each.

The total acreage of man-made reservoirs, impoundments and marshes far exceed that of farmed ponds.

While natural wetlands often are superior to man-made wetlands in their overall quality, the difference is usually attributable to construction, management, design and use.

Man can and has constructed large acres of wetlands with superior natural system value. The potential for doing so as part of the strip mining process is enormous.

The draft impact statement seriously errs in suggesting otherwise.

Unfortunately, most of the 3,567,723 acres in the study area is poor wildlife habitat because man has put so much of the area into alternative land uses to provide higher yield cash crops.

Now, the logic of habitat is so simple. Without it, management of the wildlife resources is fruitless because life is divided.

Conversely, wildlife can stand an incredible array of attacks if its habitat remains intact.

Ironically and quite by accident, much of the best remaining wildlife habitat in the mined areas is also man-made in the form of unclaimed land.

Equally ironically to me, public interest groups most concerned with wildlife habitats preservation fail to recognize this and were instrumental in passing the 1975 reclamation act, which goes about reclaiming this excellent wildlife habitat and converting it to more man-dominated and intensively-used, agriculture, commercial, industrial and residential land.

Well-intentioned conservationists, environmentalists, government leaders, even professional ecologists and resource managers are in practice missing the habitat message.

It can be abundantly read from the previously-managed landscape in Polk County.

Modern man is a super destroyer of wildlife habitat, but he can be just as efficient in restoring habitat. We seldom have a chance because restoring habitat is so much more expensive than destroying.

This is why strip mining can be such a powerful source of habitat restoration, since restoration costs can be built into the pricing of the phosphate matrix and restoration of natural systems can be part of the mining process itself.

The intention of those wanting to maximize natural habitat should be directed toward restoring more and better acreage behind the mining, rather than preservation from mining of often severely-impacted habitats.

The best can-do examples of massive wetland habitat restoration can be credited to Ducks Unlimited. I'm hammering into this because so many times in the statement we're told that man can't create wetlands, man can't restore wetlands.

In forty years, Ducks Unlimited has spent over $40 million to build 1,347 wetland habitat projects in Canada resulting in 2.5 million wetland acres with 10,000 miles of wetland uplands added.

The 1977 program alone spent $10 million for 118 new habitats, adding 60,000 acres. In many drought years, a preponderance of water fowl production occurs in the man-made marshes that hold water, no structural control, when the natural wetlands have gone dry.

Our US water fowl program is $100 million annual budget, a good part of which goes to creating wetlands and maintaining them.

Some fifteen states now sell the state duck stamps to raise revenues to do the same thing. The literature is full of case histories that establish that man can and has built high-quality wetlands.

Finally, I would quote the excerpt from "The Fisheries." This is taken from an opinion editorial and is in no way representative of a scientific paper.

"God or nature does create the wetland, but man clearly can and often does saturate the land with water, which immediately starts the creative process," and it's terribly misleading and damaging to leave you folks with the idea that that can't be done.

MR. TRAINA: I must say something. I'm glad "The Fisheries" recognizes that God still has the ability to create wetlands. For a minute there, I thought just the phosphate industry was.

(Laughter)

DR. CORNWELL: I don't think the phosphate industry has been directed or guided in the direction of creating wetlands, and I think that's one of the functions that this impact statement will do in future reclamation.

In terms of restoration, I would reiterate the statement that the greatest potential for significantly increasing the areawide inventory in the seven counties is through phosphate mining activity.

None of the other major land uses are going to have the potential built into them to create any

1-162

significant acreage of wetlands, and furthermore, I believe it's much easier to restore wetlands than virtually any of the other natural systems that are present on the land to be mined.

Now, in the proposed action section dealing with wetlands, I have a very great concern; that is that it's going to be extremely difficult to protect wetlands and mine around them, and even if you should have a nourishment project to keep them alive during the mining process, there's a very real probability for many of them that I've seen in areas to be mined of their being purged and surrounded by any kind of compatible type of land.

So in the proposed action, I think that we need a quality basis for distinguishing between Category 1 and 2 wetlands; in other words, this needs to be very carefully developed.

And then secondly, the potential for each Category 1 wetland to survive mining must be determined. It would be pretty heartbreaking to wind up with wetlands that were preserved and then went dry.

I think both of these considerations are best relegated to site-specific DRI or EIS process.

However, an areawide guideline for assessing these individual wetland characteristics should be put together by the concerned parties.

MR. TRAINA: Are you saying, Dr. Cornwell, that you do recognize that wetlands should be identified and protected in this area that you would relegate consideration ---

DR. CORNWELL: Very definitely. I would put the riverine systems ahead of that category, and I'm sure there are others that would definitely fall into a high enough quality to weigh the preservation question and then ---

MR. TRAINA: You recognize that some wetlands should be preserved?

DR. CORNWELL: Oh, I'm all for preserving every high productive, high quality wetland system we can.

I'm also very much for increasing the inventory of those type systems.

MR. TRAINA: Let me ask you a more or less technical question. I'm not a biologist, so please excuse me if I don't get the right words.

On the question of diversity, as I understand it, that is one of the essential elements, looking at the productivity of the value of any area, the wetland included.

Are you saying that biological diversity has been increased because of phosphate mining into these areas?

DR. CORNWELL: I'm saying that's very definitely the case for many of the lands that have been ---

1-164

I'm saying I feel that's very definitely the case for many of the lands that reverted naturally to, and had time for diversity to develop.

MR. TRAINA: In other words, the wetland that before was less diverse than the wetland that was subject to mining, is that what you're saying?

DR. CORNWELL: I'm saying that a fresh water marsh system can come in following a mining operation given adequate time because the diversity develops over time than that wetland, for the reasons I started out with, the why aspects. It can have a higher diversity because it has a higher productivity, and it has more niches, than a natural system fresh water marsh prior to mining.

MR. TRAINA: Is there data that confirms this or just something that you ---

DR. CORNWELL: No, sir, I don't believe there --- Unfortunately, these types of things have not been studied. There is some limited data on the lake edges that the Game and Fresh Water Commission has.

Their studies show them to be very healthy.

MR. TRAINA: From the beginning of the mining process to the point where you say that you have restored wetlands, what period of time are we talking about?

DR. CORNWELL: It would depend on --- For wetlands, it would depend on the wetland. The fresh water

1-165

marsh could come in very quickly, within two to three years, particularly if the site is shaped, to have a fresh water marsh come in.

On forested wetlands, for species like cypress trees and gum trees going toward the swamp forest-type community, that would depend on your propagation unit and how much energy you put into planting, but in Louisiana and Mississippi, where the Forest Service has researched these species, you can get 15-inch DBH of diameter from cypress ten years after they're planted.

MR. TRAINA: Ten years after, in this case, the pond would be abandoned or not used any longer, in that ---

DR. CORNWELL: Right.

MR. TRAINA: Now, how long does the pond usually work?

DR. CORNWELL: Well, I think we have the option in restoration to structure areas being restored in terms of topography and water supply to fit the system we want to come in.

Now, in the past that hasn't been so. The natural succession has come in, and on the Tenoroc site, for example, you can see the ponds moving out, closing in, and the shrubbery coming out, but they haven't gone yet to the tree stage system.

MR. TRAINA: When was that site first developed or used ---

DR. CORNWELL: These ponds that I'm thinking of on the Tenoroc site are probably twenty years old that are now having tree species moving out onto the land.

MR. TRAINA: So in that case, it was a twenty-year lapse --

DR. CORNWELL: Yes.

MR. TRAINA: -- before it was just beginning to get ---

DR. CORNWELL: But again, this is because there was no management, except abandonment. There was no design of the abandoned base.

MR. TRAINA: But if you did design these as you had suggested, how long a time do you think it would take to develop this area that again is more diverse or as diverse as it once was?

DR. CORNWELL: I think that for most of the aquatic and wetland types, twenty years would be --- You'd have them well on the way to where you want them to be.

For the fresh water marsh types, five years, and it'd be well mature.

The mesic hammocks, like at the Christinie site, it may take longer, not to establish them, but they just take longer to develop, whether they're planted by man or naturally.

1-167

MR. TRAINA: What happens to the water in land that is supported by the wetlands area in that twenty-year period?

DR. CORNWELL: Well, that would depend on the water crop approach and, you know, all the aquatic factors and the shaping of the water sheds that feed into systems you design, and I think in a restoration plan you can plug all that in. You shape and configure the land, the upland portion of the sites, to support your wetland components, and you use things like sand tailing to go for the dry site communities.

MR. TRAINA: Can this be done on existing areas?

DR. CORNWELL: Yes, sir.

MR. TRAINA: Has it been done, to your knowledge?

DR. CORNWELL: No. There's been, for example, there's been very little experimentation with the sand tailing-type habitats, and the pine that's been planted on them have done fairly well.

They haven't really done much with the right kind of vegetation, in terms of re-vegetation. I think that ought to come with experimentation.

We have --- It's not widely recognized, but we have hundreds of experiences in what could be called the art of managing land, drawing heavily on European experience.

And we have had historic background, both to the capability of doing this, and the fact that it hasn't been

1-168

funded and done experimentally in Polk County or in the seven-county area is not in any way saying it can't be done, and there isn't anything mystical or magical about it.

MR. TRAINA: As an ecologist, would you suggest that you work on the existing areas and see whether you can restore those, hold off on new areas, to see whether a program like this could work in Polk County?

DR. CORNWELL: Well, I think that there should be some experimentation, and some experimentation's underway right now, but I feel that for much of it, particularly in the wetland types, that for 20 or 30 percent of them, the best thing you can do is just to allow them to revert without doing much of anything, because you would have that rough terrain sanctuary that's proven to be so important.

The areas that you designate for marsh, much of it being slime pond management areas, that would come out very quickly, and that could be done right away.

When you start talking about reforesting, to go to a forest, wetland situation, because that's going to be costly and labor-intensive, you know, so I think you should experiment with it some locally.

But I think if you do it and design it right and do it intensively enough, in two or three years, you'll know where you're going and you're ready to put it out in large

1-169

use.

MR. TRAINA: Thank you.

DR. CORNWELL: Your questions have taken me further along in what I had to say, and I'll just close now.

A couple of thoughts on the wildlife impact aspects. It's difficult for me to envision any possible long term adverse effect areawide on any particular wildlife species or on man and wildlife interface, in terms of game animals and pest animals, and this sort of thing.

Now, unfortunately that's probably one of the greatest weaknesses of this impact statement, as has already been pointed out to you, and that is the discussion and the rationale ---

I mean, it's one thing to say there are twelve species or whatever that are endangered, threatened to be adversely impacted, whatever the number.

But you can't find anywhere in the discussion of how or what or what's their rationale for that, but again I'm looking at the experience we had in Polk County, and I'm trying to see what species of this county have been adversely impacted county-wide that can be attributable to mining.

And I have a lot of trouble pinning down one species. I think that it's clear to man, looking at the naturally-

1-170

scored land from a wildlife standpoint, the net overall effect is just going to be a big plus to wildlife; whether it's just left to revert naturally, it would be a big plus, or we're going to man-dominated systems.

And just remember what the mining's taking out is principally man-dominated systems, and the report breaks down; and you have an awful difficult time pinpointing what specific natural systems are going to fall into the mining areas.

But if we take this jump that I'm talking about in restoration, really go after restoring natural habitats, plus providing wildlife sanctuary for man and domesticated predators, this seven-county area could be the African belt of Florida.

Thank you.

MR. TRAINA: Thank you, Dr. Cornwell.

I'd just like to make just one comment before we get to the next speaker, and that is it would seem to me that the industry might want to look at the existing areas in terms of some of the suggestions you had and see what they can do with existing areas.

I understand your comment is with regard to the recommendation that on new areas, if the industry could demonstrate on existing areas these lands could be restored, certainly I think it gives us the best data base.

Thank you very much, sir.

DR. CORNWELL: Yes, sir.

MR. TRAINA: Pete Edward Holloway.

MR. HOLLOWAY:

My name is Edward Holloway. I'm here as an interested citizen. I'm not here because I'm an expert witness or I'm being paid.

I have owned some mined land for about twelve years. I'm a developer. I own some citrus, some cattle land, involved in some agriculture.

I've had some practical experience in working with these phosphate lands, or the equivalent. I've farmed it. I've planted grass. I raised cows, and I take issue with lots of the things that I find here in your impact statement.

On page 2 --- Well, first, let me say that I agree just about 100 percent with our last speaker, George Cornwell, and it's been my practical experience in working with these lands that he is --- My experience tells me, bears out just what he has been telling you.

My working these lands tells me the wildlife habitat and populations are improved, and I can look at some of these flatwood lands down in Sarasota County and south of here, and in my opinion, mining perhaps would improve these lands.

And my experience tells me that the digging and mining of these lands, bringing these clays to the surface, where they hold moisture, these lands become very, very productive, and my recommendation here to this review committee, I think the mines have missed an opportunity to be creative with their mining, and they've truly missed an opportunity to take advantage of what they could do with respect to making more lakes and making more wildlife areas.

And it would be my opinion that even these unmined areas where wildlife is very plentiful, that perhaps the tops of the docks could be leveled and a way made for people to get into these areas to actually see what is there.

And I do think that we're on the right track here, and Dr. Cornwell certainly brought this out very,vividly.

Paragraph 3(b) on that page 2 says productivity of the mined area will be reduced even after reclamation. I do disagree with that. I think I can substantiate my statement.

I agree that the recreational resources will be reduced, and that esthetic aspects will change, and my experience has been with respect to the wetlands. I don't think it will take as long as Dr. Cornwell said

1-173

for the wetlands to actually come back. These lands are very fertile by reason of the clays, and they hold the moisture, and you start off with a heavy vegetation, willows, and it surprises you when you really get into it and study it.

I came down here because I read last night about the wetlands, about the companies not being able to mine the wetlands, and that concerned me greatly as a land owner, and I can see where a farmer or a rancher's individual rights are being threatened, where he perhaps owns some low lying areas. Perhaps these areas have valuable phosphate deposits worth several thousand dollars an acre.

Next door there's an owner with high lands with the same type of deposits. One is permitted to be mined; one is not permitted to be mined. This concerns me greatly as an owner.

Should this take place and land be controlled, in my opinion, the owner of those low lying lands should become saved in some way, and I think the restriction of that wetland area by land use control, compensation, certainly in my mind would be unconstitutional, I would hope.

And that gives me concern. The other cause of concern that scares me, when I read, even look at this, as a buyer of phosphate fertilizer, and knowing what's happening in the prices of food and farm products, it scares me as to what could happen, by reading of the action, you know, of so much regulatory measures.

Thank you.

MR. TRAINA: Thank you very much, sir.

B.J. Register?

MR. REGISTER:

My name is B.J. Register. I live at Bartow. This (indicating jar) is a specimen of water that I got this afternoon.

I would like Mr. Hooks to come up and give me an estimate on what he would think if finding that water.

MR. TRAINA: I couldn't get Mr. Hooks to do that, but would you describe where you got the water, or whatever it is?

MR. REGISTER: From 1952, about 1952, until they mined out across 555, for the most we had perfectly good water.

I complained to IMC. He said the trouble was in the pump.

MR. TRAINA: Is that water from your pump?

MR. REGISTER: This is water from my pump that I got this afternoon.

1-175

MR. TRAINA: Did you have anybody look at that water?

MR. REGISTER: Beg your pardon?

MR. TRAINA: Have you ever had anybody look at what was in that water? It doesn't look too good from here.

MR. REGISTER: Let me just pass it down here. Look down in the bottom of it.

MR. TRAINA: This is water from your well that's on your land?

MR. REGISTER: It's from my well, right out of my spigot this afternoon.

MR. TRAINA: Oh, from your spigot that's in your house?

MR. REGISTER: Right.

MR. TRAINA: How long has it been this way?

MR. REGISTER: It's that way or worse all the time.

MR. TRAINA: All the time?

MR. REGISTER: All the time it's ---

MR. TRAINA: I hope you don't drink this water.

(Laughter)

MR. REGISTER: No, no.

MR. TRAINA: Are you close to one of these mining or chemical plant areas?

MR. REGISTER: Beg your pardon?

MR. TRAINA: Are you close to one of these mining or chemical plant areas? Why do you think the water looks this way?

MR. REGISTER: I think it's caused from mining across 555 from where I live.

MR. TRAINA: How deep is your well?

MR. REGISTER: I don't know. I didn't measure it.

MR. TRAINA: I'm afraid to even open this to smell it.

(Laughter).

MR. REGISTER: Go ahead and open it.

MR. TRAINA: Am I going to taste it?

(Laughter)

MR. REGISTER: They sent somebody out and said that our pump was giving us some trouble.

MR. TRAINA: Your pump was giving you trouble? How long have you had this water that looks like this?

MR. REGISTER: Since they mined over across the road.

MR. TRAINA: How long ago was that, sir?

MR. REGISTER: About three or four years.

MR. TRAINA: Three or four years ago you

had water like this?

MR. REGISTER: Yes, sir.

MR. TRAINA: Did anybody look at the well?

MR. REGISTER: Yes, sir. They sent someone out, and they said that the trouble was in the pump.

MR. TRAINA: Did you have your county health people or somebody come look at your well?

MR. REGISTER: No.

MR. TRAINA: Well, I don't know what the reason is, but since water like this shouldn't be in a house, you ought to get ---

MR. REGISTER: I don't, either.

MR. TRAINA: Is there anything else, Mr. Register, you'd like to tell us?

MR. REGISTER: No, sir. Until that mine across 555 there, we never had a bit of trouble with the water.

MR. TRAINA: Is there a pond or something close by, a big pond?

MR. REGISTER: No, sir. There's a standard pond.

MR. TRAINA: That's used by the mining area?

MR. REGISTER: Yes. We're just across the road from where they did mine.

MR. TRAINA: Are they still mining there?

MR. REGISTER: No, sir, not in that particular area; on the other side.

MR. TRAINA: But your water still looks this way, water still looks like that?

Well, I appreciate your bringing it to us. Again, I can only suggest to you that certainly don't drink it under any circumstances, and maybe you should get your health department to come out and check it and maybe they can make some studies as to why it is the way it is.

(Discussion off the record)

MR. TRAINA: Thank you very much for coming, sir. Appreciate it; thank you very much.

That concludes the speakers that we had cards for. At this time, I would like to ask, anyone else who hasn't made a statement or anyone who ---

I'm sorry; excuse me, sir. You did hand me a card. W.M. Leaders?

I'm W.M. Leaders, Technical Assistant to the President of the Uranium Recovery Corporation, somehow referred to several times in this report.

I'm disturbed by the lack of economic evaluation and the impact of the regulation and of the fertilizer industry of the United States of America, particularly how it might affect our international balance of payments, especially since this report indicates that the foreign reserves are some ten times what they are in the United States, most of them in Moslem countries.

And most, I'm disturbed by the lack of economic evaluation of the proposed requirements for lining ponds with impervious membranes.

This has been going on in the water supply industry in the United States for many years. Its economic evaluation is obviously known to the United States of America.

And I'm also concerned with the lack of economic evaluation of a requirement for uranium recovery. People who evaluated our industry, we are the only operating people taken for granted that we're making a tremendous profit.

I'm also very concerned with the lack of economic impact on human life in this area, if the industry were shut down.

Specifically, I would like to take exception to paragraph (sic) 1.50. This is concerning low level radiation, long term effects in the second paragraph on this page at the top.

Low level effects, long term effects of low radium levels, doses, are not fully known. I want to call to the attention of the EPA that the human body contains and has contained for many centuries .35 percent of potassium.

Many of you who have been reading about these crash diets may have heard about the potassium sodium that causes death in people.

The human body has .35 percent of potassium in the system, primarily in blood deposits and the nerve tissues.

What most people don't know, including your doctors, is that all potassium in nature is radioactive.

This was used very recently to date the moon rock. I published a paper in the American Chemical Society Journal in 1941, "The Use of Potassium to Date Meteorites."

This content of potassium in the human body contributes 1,335 disintegrations per minute per pound of body weight to date. In 150-pound human being, this is 200,000 disintegrations per minute in your blood stream and at your nerve endings.

Your greatest exposure to extra radiation, ladies and gentlemen, is when you are very, very close to another human being. Now, I'd like Mr. Nader to outlaw that action.

(Laughter and applause)

As a comparison, the gamma ray from the radium-226, which is highly publicized in this report, is .19 MEB or 190,000 electron volts. The gamma ray from K-40, the isotope in your body and my body, has energy, 1.5 million electron volts, roughly twice the energy of radium-226.

I don't want to get near these people. The gamma ray energy, sometimes reported in the old industry as being phosphoric acid and reported as radium-226, is not true.

The gamma ray energy in the phosphoric acid, which we treat as a by-product of the phosphate industry, is the gamma energy of the natural isotope of uranium U235, which has energy equivalent of 187 thousand electron volts or just 3,000 electron volts different than radium-226.

And until the discovery of the radium lithium centimeter, it could not be distinguished from radium-226, so the old literature is in error.

I am also quite disturbed that this report does not include radiation surveys on unmined land in Polk County, Lake County, Orange County, and other counties along the shoreline of the geological formation that runs from Orlando, Okeechobee north, through Georgia.

This is known to the radiological department of HRS in the State of Florida. My children went to school in Lakeland on unmined land, which has just as high a background as the so-called reclaimed land in Florida.

That's all, gentlemen.

MR. TRAINA: Thank you very much, sir.

I think that concludes the cards I have of people who indicated they wanted to make statements.

Is there anyone else who would like now to come forward?

Yes, sir?

MR. CARR: Mr. Traina, I made a presentation in Bradenton. I am Archie Carr with the Florida Audubon Society, Lakeland, Florida.

I do not wish to take the time of another long treatise. I would like to perhaps, if it's permissible, to ask Dr. Cornwell a couple of questions that will perhaps expand on the testimony that we had here.

MR. TRAINA: Certainly it's all right with me, but I'll have to defer to Dr. Cornwell. I found his statement rather intriguing. I don't want to get into a discussion here.

MR. CARR: I can assure you that I'm not going to be antagonistic to my former professor at the University of Florida.

MR. TRAINA: I think you've gotten his attention now.

(Laughter)

MR. TRAINA: If others can bear it, certainly I can. I think I might learn something; I was rather fascinated by what he had to say.

For the record, they just shook hands.

MR. CARR: I'd like to say that one of our principal advisors on the question of restoration, Dr. Jim Lane of the Archibald station, has generally advocated to us that a no-reclamation or minimal-reclamation procedure is certainly the most favorable one, for the reasons that Dr. Cornwell has espoused, that if habitat is created, then wildlife would be enhanced.

There are a couple of items I'd like Dr. Cornwell to try to expand on.

First is a philosophical one, that we in the Audubon Society are, of course, concerned with --- We are environmentalists; we view native Florida habitats as important, per se.

I accept that a great deal of the terrain that will be mined is modified countryside, farms and so on, but a certain amount of it will be somewhat native habitat.

You seem to be suggesting that if we exchange that for very modified habitat, which indeed may be richer, but a very different habitat --- Now, if we adopt that as a philosophy, then modification in the State of Florida becomes permissible.

We end up with a cultivated ecosystem from one end of the state to the other.

How do we resolve that problem philosophically? Should we permit any type of modification of the environment, even if the consequence of that modification is a richer and improved habitat, no longer a native Florida habitat?

So there's a philosophical question that I'd --- Perhaps you'd like to comment on that.

The other is quite brief.

DR. CORNWELL: Yeah, I think they ought to be one at a time.

Philosophically, I've been committed in my lifetime to causes of the Sierra Club and Wildnerness Society, Natural Parks Association. I've been a naturalist for the National Park Service and a biologist for the Fish and Wildlife Service in Alaska, and certainly natural systems are closer to my heart than man-disturbed or man-dominated systems.

But you cannot study the history of man's occupancy of land without recognizing that one of the hallmarks of our species is changing our environment, and indeed

1-185

that is a trait common to virtually all born into animal life.

I think that we have a capacity that we rarely use, to intelligently evaluate the ways in which we modify our environment, and this discourse tonight is a painful exercise in our trying to improve on the way we've done it in the past.

I feel there's a great deal of room for improvement.

Now, there are few portions, even in Florida, that, in terms of human impact --- I would feel the seven counties are among the most impacted by man of any block of seven counties in Florida.

The gold coast counties have larger acreages of natural systems.

The consequence of this, when we look at the 20 percent more or less, is that a lot of it is disjunct; it's isolated parcels, and its productivity falls way off.

I think that it's also clear, from the land analysis in the impact statement, that we're talking about 3 to 4 percent maximum of any natural habitat in the area that is going to be impacted or eliminated on the short term by mining.

I believe that --- Well, one of the habitats that we're most concerned about is the sand pine scrub, which has been used for, you know, for a great variety of human indulgences, and the forestry. You know, they use this to the extent that they're in real trouble, but most of the sand pine scrub in the seven-county area -- and it'll be just a few hundred acres -- is not on lands to be mined.

The only parcel I know of, after looking at all the DRI's they have done, is a small 4 or 5-acre piece in Manatee County among the closed mine sites.

Now, I think that's a clear cut example of where the site-specific impact statement would recommend non mining of that; whereas, the focus of this impact statement as discussed has been wetland, wetland, wetland.

I would say that rambling beech and sand pine scrub there is more important ecologically than the wetland acreage on the site.

But for the great bulk of the land to be mined, or virtually all of it, I think the natural systems they go under are the trade-off for the potential that you have to create acreages, net acreages, that function in terms of biota, do everything that you want that ecotype to do.

And I think if you're looking for straight preservation use, you need to go to the public ownership parcels and ---

And, you know, when I was a member of the Sierra Club twenty-five years ago, they used to say, "How much wilderness should there be?"

And the Sierra Club would say, well, we would like half of 1 percent committed to that type of use, and now it's 10 percent to preservation use so, you know, these things change, but we are dealing basically with private lands with a very important resource underlying them, and there has to be some combination of the preservation philosophy and the trade-off you can get for mining land.

MR. TRAINA: Do you want to continue ---

DR. CORNWELL: If the next question is simpler, my answer would be ---

MR. TRAINA: Well, a philosophical question certainly deserves a philosophical answer.

(Laughter)

MR. CARR: Endangered species and habitats; many endangered species are endangered because they have a very unique habitat that is satisfactory for their natural history.

Should we --- You're not suggesting that we eliminate endangered species habitat and restore -- allow some sort of natural restoration to occur?

The point is it's very likely that you will not restore anything useful for, say, one of these unique little plants that are involved.

Could you clarify your call for natural restoration versus endangered species habitat protection?

DR. CORNWELL: All right. Again, well, I'll point out that one of the great gaps in the draft impact statement is identification of these species beyond an enormously-long table that's headed "Important Species," and to you and I, every species is of equal importance in the chain of life, so that's a nisnomer unto itself, so I don't know at this point what species the biologists in this report are really saying will be adversely impacted by mining.

And I don't know what their rationale is. I'm saying that standing here right now, I could not name one that I know as a fact would be endangered further by the proposed action.

MR. CARR: I'd ask for further elaboration on endangered species, next to myself, as a matter of fact.

With respect to wetlands, is there a difference between restoring wetlands and creating a new one?

We can look at some of the slime ponds, as you've said, and indeed they have water fowl and fish value, wildlife value.

Isn't there a hydrological and ecological difference

1-189

in procedure where one creates a new wetland and one restores a cypress swamp or river basin that exists there now, with the EIS argument that one cannot create the organic basis, the drainage system, and ecological organic systems that evolve on top of that and therefore the strong precautionary language in the EIS?

DR. CORNWELL: Well, again, I would believe that you and I and whoever went to school in wildlife management, at some point in their background would feel confident in taking almost any piece of real estate, and, if they can make the soil heavy enough to hold water and could share a water supply, they would feel confident in the ability to create a wetland, the sophistication of which would only depend on how much money they spent, starting from scratch, starting with never a wetland at that site.

And of course, there are all kinds of wetlands, twenty-some different kinds, and this general interpretation has to be modified when you address each wetland type.

There certainly is a difference between restoring and creating, but much of the so-called restored wetland was indeed destroyed as a wetland, the Horicin Marsh in Wisconsin being a good example.

I mean, it was drained, and it was farmed; the hydric soils were burned away, blown away, and gotten down to a bare scene, but through water control and through management, a marsh was again put there, and you might call that restoration, but really you're starting from scratch with just a former wetland site that no longer had wetland characteristics till you went in there and put in structures for water and managed it.

And I think that's really a fine point and not particularly relevant to the data base.

MR. CARR: Well, again, it's relevant if you're a purist ecologist. We might have a new species evolve, a slime pond darter, for example.

(Laughter)

MR. CARR: And that, then, would be creation, but again, to fall back on the philosophical argument ---

MR. TRAINA: Mr. Carr, could I ask you just to conclude this subject? I don't want to get into this in any great detail.

MR. CARR: Okay. Thank you very much.

MR. TRAINA: Would you summarize, if you want to summarize, if you like?

MR. CARR: I might make this point on

development, that we are indeed interested in protecting what we conceive of as native Florida habitat, and we, for example, our organization, has advocated the environmentally-endangered land bill protecting -- sought to obtain a native injunction to the Florida landscape, and we see a qualitative difference between highly-modified lands, all be it productive lands; it's good for the general wildlands of various species of wildlife, but there's a qualitative difference between that and the native habitat, even if it is a pine flatwood or a scrub versus a very rich hammock.

And I think that society needs to consider those things when we consider the alternatives, the options, that we are presented with in the course of a major mining event such as this.

Thank you very much.

MR. TRAINA: Thank you, Mr. Carr.

Does anyone else care to make a comment at this time?

(No response)

MR. TRAINA: I'd just like to say -- I say this a bit of tongue and cheek -- that I always learn something in these public hearings.

Tonight I learned that the phosphate industry rather than God created wetlands and that man is more radioactive than uranium is.

(Laughter)

MR. TRAINA: Be that as it may, we're going to keep the comment period open until June 23rd so those of you who would like to send us written comments, please do so, and those should be addressed to Mr. John Hagan, Chief of the EIS Branch, EPA, Region IV, 345 Courtland Street N.W., Atlanta, Georgia.

As I said, we'll take into consideration all the comments and statements that were made and will be made and we will address those comments in the publication of the final EIS, which is scheduled for July 31st.

Again, all persons on the mailing list would receive a copy of those findings.

I want to thank you all again for coming.

The meeting is adjourned.

(Whereupon, the hearing was adjourned at 9:25 p.m.)

-oOo-

CERTIFICATE

This is to certify that the attached proceedings before THE ENVIRONMENTAL PROTECTION AGENCY, REGION IV in the Matter of:

Draft Environmental Impact Statement Public Hearing

City of Bartow Recreation Department
Bartow, Florida

7:00 p.m.

May 24, 1978

were held as herein appears and that this is the original transcript for the file of the Agency.

ANNE JAPOUR
Official Reporter

-o0o-

UNITED STATES OF AMERICA
ENVIRONMENTAL PROTECTION AGENCY
REGION IV

- x

A Public Hearing:

DRAFT AREAWIDE ENVIRONMENTAL IMPACT STATEMENT

CENTRAL FLORIDA PHOSPHATE INDUSTRY

March 1978

- x

Time: 7:30 p.m.

Date: May 25, 1978

Location: Punta Gorda, Florida

-o0o-

BAY PARK REPORTING COMPANY
COURT REPORTING
33 FOURTH STREET NORTH
ST. PETERSBURG, FLORIDA 33701
(813) 823-8388

1-195

APPEARANCES:

THE CHAIRMAN:

PAUL TRAINA
Director of the Enforcement Division
Environmental Protection Agency
Atlanta, Georgia

THE PANEL:

DR. MARVIN COLLINS
Florida Department of
Environmental Regulation
Tallahassee, Florida

BILL STOWASSER
Bureau of Mines
Department of Interior
Washington, D.C.

BILL PHILLIPS
Office of Regional Counsel
Environmental Protection Agency
Atlanta, Georgia

SPEAKERS	PAGE
Robert Shedd	27
C. R. Johnson	30
Joseph R. Roach	31
Dr. M. H. Bigelow	39
S. R. Stedman	43
Samuel Wapner	45
M. W. Chesson	51
Jim Kelly	58
David Wilson	63
Robert McQueen	65
Jonathan Miller	77
Vasco Peeples	86

PROCEEDINGS

(Whereupon, at 7:35 p.m. the hearing was called to order)

MR. TRAINA: The hearing is open.

Good evening, ladies and gentlemen. My name is Paul Traina, and I am Director of the Enforcement Division of the United States Environmental Protection Agency in Atlanta, Georgia.

The Regional Administrator of Region IV, Mr. John White, has designated me to conduct this hearing tonight.

I would like to introduce the panel members. On my far right is Mr. Bill Stowasser; Mr. Stowasser is with the Bureau of Mines in Washington and is representing the Department of Interior.

On my far left is Dr. Marvin Collins. Dr. Collins is representing Jay Landers, the Secretary of the Florida Department of Environmental Regulation.

On my immediate right is Mr. Bill Phillips, who is with the Regional Counsel's office of EPA in Atlanta.

And on my immediate left is Mr. John Hagan. Mr. Hagan is Director of the EIS Branch in Atlanta, Georgia, with EPA.

I also,,at this time, would like to have the --- I understand there's a number of county commissioners and perhaps city officials here.

I believe the chairman of the county commissioners is here. Would you please get up, sir, and identify yourself?

MR..SCHADE: Schade.

MR. TRAINA: Yes, sir, Mr. Schade. Thank you, sir, and we sure appreciate the room tonight; it's very nice, and we appreciate it.

MR. SCHADE: Happy to have you here.

MR. TRAINA: Are any of your other county commissioners up here who'd like to be recognized?

MR. SCHADE: I have Commissioner Bob Shedd right here. I think he's coming.

MR. TRAINA: I understand there's some business here in the courthouse, so you've been going back and forth.

Are there any city officials here?

A VOICE: Mr. Johnson, City Councilman.

MR. TRAINA: Thank you, sir, for coming.

Any other elected officials here with us tonight?

(No response)

MR. TRAINA: Tonight's hearing is concerned with a two-year study on environmental, social and economic effects of continued expansion of the central Florida phosphate industry.

The purpose of the study is to comply with the National Environmental Policy Act of 1969.

Issuance of National Pollution Discharge Elimination System permits for new sources of phosphate mining and chemical processing operations constitute a federal action which significantly affects the human environment.

However, as such, the National Environmental Policy Act requires development of an Environmental Impact Statement prior to the issuance of these NPDES permits.

It was determined in early 1976 that the number of new phosphate operations, which would request permit applications, would make individual site-specific environmental impact statements ineffective in determining areawide and cumulative effects.

Each individual study would determine effects of that particular operation, and areawide or cumulative effects might easily have been neglected.

For this reason, all new sources were held in abeyance. All new source permits were held in abeyance while the areawide EIS was developed.

A draft of this statement has been prepared, and notice of its availability was published in the Federal Register, Volume 43, dated April 21st, 1978.

The hearing this evening is for the purpose of receiving comments from the public on this draft Environmental Impact Statement.

All substantive comments on this draft statement will be considered by EPA and summarized and addressed in the final Environmental Impact Statement.

I might just say at this point that the comments we received so far -- this is the third meeting we've had -- have been rather substantive, and we are going to be considering those in some detail.

As stated on the agenda, there will be a brief presentation by EPA and the contractor of the study, Texas Instruments, to summarize the major conclusions of the draft EIS and how those conclusions were developed.

Those of you who've indicated on the registration card that you wish to make a statement, you will be given that opportunity.

At this point I would like to introduce Mr. Gene McNeill. Mr. McNeill is the Project Manager for the phosphate study and will give us a little summary of the study and then introduce our contractor.

Mr. McNeill?

MR. MCNEILL: Thank you, Mr. Traina.

First, before I get started, I'd like to make a couple of introductions.

During this study we have had an inter-agency steering committee consisting of the federal agencies who are involved in any sort of regulation or permitting of the phosphate industry.

And on that we had representatives from the US Army Corps of Engineers, several of the interior agencies, CEQ, and Department of Agriculture and, of course, EPA, and also the State of Florida was represented on the steering committee. The State of Florida representative was Jay Landers, who also happens to be the Secretary of the Florida Department of Environmental Regulation.

In addition to the steering committee, we had an advisory committee, which consisted of representatives from each county.

We asked each of the county commissions, within the study area, to designate a representative for the advisory committee.

Also on the advisory committee we had a representative from the Southwest Florida Water Management District and a representative from industry and a representative from the Florida environmentalist groups.

Of those committee members here tonight, I've seen --- I know Bucky McQueen is here; I'd like to introduce Bucky. Most of you, I'm sure, already know him.

The industry representative is Homer Hooks. I saw Homer here. Yeah, Homer Hooks, who is also president of the Florida Phosphate Council.

And I would like to mention at this point, it just happens that these two that are here tonight had perfect attendance; Bucky and Homer were the only two that attended every advisory committee meeting we had, and since most of you are from this area, live in this area, I'd like to mention, at this point, special thanks to Bucky for the assistance he's given us throughout the study. He's been pretty pointed in some of his comments. I couldn't say he's been totally nice. (Laughter) He tells us what he thinks of us, but he's also been extremely helpful.

I'd also like to thank him, at this time, for helping arrange this auditorium for the meeting.

Okay. At this point I'm going to turn it over to the prime contractor on the study, Texas Instruments, to make a real brief presentation on how the information in the study was developed.

With that, I'll introduce the Project Manager of Texas Instruments, who was our prime contractor, Larry Bowles.

MR. BOWLES: I have two of my colleagues with me I'd like to introduce, Dr. Arnold Stalder and Dr. Audrey James.

All total, during the peak staffing there were about twenty of us involved in the program, twenty TI-ers, and then there were nine of us that constituted the core that are still working different phases of the program.

I'd like to very briefly make a presentation on some of the ground rules that we operated under in the study and our approach to developing the information that

1-203

eventually became the draft Environmental Impact Statement, and then show you a few of the slides of pictures that we've taken in the seven-county study area, showing the various land uses that we had to deal with, and then I'll turn it back over to Mr. Traina.

First of all, as you all know, it was designated a seven-county study area, including a tier of four counties, Polk, Hardee, DeSoto, and, of course, Charlotte County, Sarasota, Manatee and Hillsborough County.

You see here this area designating the higher grade, generally higher grade of bone phosphate of lime, where the majority of mining has occurred at this point.

And then this area here is designating a little grade, and you can see this cross-hatched area, which probably appears gray to you, represents mines that are represented by DRI's.

In topographic relief, this reveals a little more information, what we're dealing with, in the Polk Uplands. Primarily, the mining has occurred here.

There's some new mines being proposed along this ridge here and then again along a ridge here on the DeSoto plains, where the grade seems to be a little better.

We also included, of course, Charlotte Harbor and Tampa Bay in our study.

The major emphasis was to use to the maximum extent possible existing data. We received help from various tiers of governmental agencies, including EPA, Bureau of Mines, USGS, Corps of Engineers, Fish and Wildlife Service, the Florida DER, SWFMD, regional planning councils and, in many cases, county planners.

EPA furnished us a considerable amount of material, laws, regulations, industry description, water quality and air quality.

The majority of the studies related to radiation were done by the Environmental Protection Agency.

USGS assisted us in developing information about the Floridan Aquifer and the ground water, as well as making available to us a recently-developed model of the Floridan Aquifer, which we were allowed to use to predict impacts.

The Fish and Wildlife Service with the contractor conducted an extensive survey of the wildlife in the area which we used.

The Bureau of Mines furnished information about the industry projections about future demands and future production, and our human population projections were based on the University of Florida estimates.

Gene mentioned to you the function of the steering committee and the advisory committee. This program started out being, in a very real sense, a grand experiment in the public participation and the use of the Environmental Impact Statement process as a public planning tool. I think it's been a fairly effective experiment, and we were to perform, not only an assessment of just one alternative, but there were a total of five alternatives that we had to assess the environmental impacts of.

The methodology that we used had to address a set of decision indicators, which were listed in our statement of work, which resulted primarily from the steering committee with advice from the advisory committee, and then, where priorities were required, we did have a series of meetings.

Then that direction was given by the steering committee again with advice from the advisory committee, and, of course, funding limitations are always present.

Then we assisted the EPA with the preparation of the draft Environmental Impact Statement. We also will be assisting them with addressing the comments that have been received and will be received on the draft.

And there were a set of working papers, a total of about 1,700 pages of documentation resulting from our work, and we are now preparing those, incorporating comments received on them, in the final form, and they will be entered into the National Technical Information Service system so that they will be available to the public.

In conducting this study, the history of the phosphate industry and the issues associated with it are very complex and go back quite some time, and we felt it was advantageous to EPA and ourselves to have some consultants familiar with the Florida scene.

Dr. James Nicholas assisted Dr. Louise Young and Carl Hice of TI's staff in socioeconomics.

Dr. Paul Urone and his colleagues assisted Dr. Arnold Stalder on air quality.

Dr. Eric Rifkin assisted Audrey and Dr. Michael McDaniel in ecology and general effects.

Geraghty and Miller assisted with hydrogeology with Bill Lancaster and Bill Underwood of our staff.

And Tomasino and Associates assisted myself and other staff members in the description of the scenarios in a more operational form, as well as water, surface water resources.

Now, the next set of ground rules are very important to understand when you evaluate the draft Environmental Impact Statement, because they set the time frame in which we had to estimate what the environment would be like in the future.

First of all, we projected resources and demands in the environmental setting as would exist under the different alternatives to the year 2000, and the base line of the data was as it existed on 1 August '76, including the regulations as they existed.

Now, there are some exceptions to that.

We published the preliminary findings in the form of widely-distributed working papers, and the purpose of that was to stimulate comment, as well as comment from the steering and advisory committee members such that we could assure an adequate and valid information base on which to develop information to the decision makers.

And the major integrating theme that we used was that of environmental land use planning, because we were dealing with, actually, a very major land use planner in the area.

We did have to make some adjustments, refinements in the data base. One was that future land use maps did have to be developed to represent the year 2000.

With the assistance of individual phosphate companies in response to a letter that TI sent them, we refined the information about their specific land use plans, and the Corps of Engineers' regulations regarding administration of Section 404 permitting, which has to do with dredge and fill, we took one exception of the 1 August '76 date in that they were fully implemented 1 September '77, so we used those regulations.

For the purposes of the study, we had to assume that all operations, phosphate operations that were not permitted as of 1 August '76 would be classified as new sources.

We focused on two time intervals. One was between the present and 1985, because of this peaking in production, and the other one, of course, was 2000, which was the end of the time frame which we were forecasting.

The cast of characters under those that were existing operators is this set of mines. A footnote here, that based upon the information we developed, there are no presently-announced plans for development of chemical processing plants. Of course, that could change in the future, so we're primarily dealing with plans for mining.

The next set has to do with permitting new mines. There were a set of applications at the state level, the DRI process. In addition to that, from the land use questionnaire we sent to the individual phosphate companies, we discerned that the next one, besides represented by the DRI, would probably be USS Agri-Chemical in their plant near Fort Meade.

And then there are a set of others, and we call this the industry view; in other words, perhaps taking exception to the Bureau of Mines forecast.

If all these were permitted, you can see some of these would play out in the future, and some would continue production. Then there would have to be new mines to come into play.

I mentioned that we did use existing data. We received assistance from several agencies, individuals, and so on.

I just want to give you a sampling of those to give them credit. We were assisted by DER, who provided information through our consultant.

Again, DER, on vegetative fluoride data. We received information from the phosphate industry as well.

USGS, as I mentioned, in this case, with potentiometric surface maps showing changes occurring over this time interval, and they also let us use their --- We submitted data to them; they used their model for predicting impacts.

The US Army Corps of Engineers assisted us in developing general information about the water quality and quantity in the area.

We did focus on Tampa Bay, as I mentioned, and received assistance from Tampa Bay Regional Planning Council.

We also were assisted by the Central Florida Regional Planning Council and the Southwest Florida Regional Planning Council here with nitrogen and phosphorous data, and besides developing information about the environment, the phosphate industry is part of that environment, because they're presently operating, so we, of course, needed information on just some of their emissions and effluents.

During the course of the study, our staff was in the area quite a bit of the time. We did conduct aerial and ground photo reconnaissance and took some samples and made several observations.

And I just want to show you a sampling of some of the pictures we took that represent some of the major land uses in the seven-county study area.

First of all, you recognize this strip mine; there's a forest in the background.

This is a beneficiation plant,

A chemical plant ---

This is an abandoned strip mine that was mined approximately twenty-five years ago, and without much intervention from man has been reclaimed by nature, you might say.

This is a slime pond -- a similar circumstance -- a little water. Some de-watering has occurred. You can see the wildlife in the area.

This is an old slime pond that's being used by the Florida Audubon Society.

This is the interiors; some natural de-watering has occurred and vegetation.

This is part of the scene around your country.

Here we have a reclaimed mine that's being used as a recreational park.

The majority, the greatest percentage of subsequent use of phosphate mined land is cattle grazing.

Some of the natural scenes where mining has not intervened includes this sand pine scrub.

A hammock ---

Range land ---

Here's a wetland.

And another type of wetland ---

There are several types in the seven-county study area.

Agriculture is a major land use. Of course, that includes cattle grazing, truck crops, citrus crops.

You, of course, have rivers, this being the Peace River.

The bay, and you can see the use of industrial, technical generation.

And of course, the resort community development.

These are just a sampling of some of the major land uses in the area.

We, at TI and EPA, strive hard to make sure that reports are all very informative and without error. We try to excel, but we don't claim to be perfect. We have made some errors.

And this next slide will be incorporated in the final Environmental Impact Statement and will clarify some of the textual material regarding the impact on terrestrial wetlands threatening endangered species.

I would like to comment that it's been professionally and personally enjoyable to work with EPA on this program, especially Gene McNeill and Andrea Eberhardt and the people that they work with.

It's been a very challenging program, and I hope it's been very informative to everyone who had need of information about the phosphate industry and about the seven-county study area.

Thank you.

MR. MCNEILL: Thank you, Larry.

What I'm going to do now is very briefly describe the proposed action. I'm going to assume, and I hope most of you have had a chance to read the draft Environmental Impact Statement.

The most important part, as we'll say several times here tonight, the most important part of this hearing is to hear your comments, so as I say, I'm just going to hit the high spots and not go into any detail to explain the proposed action.

By proposed action we mean that this is the action which is the basis of the environmental effects which are described in this draft Areawide Environmental Impact Statement, and as such they will become the basis for any new source mines or new source chemical plants, as well as the basis for the site-specific EIS's, which will be required for new sources.

Okay. First of all, I'll go through the proposed action for new source mine and beneficiation plants.

The first one is we're saying that the conventional rock drying process will be eliminated for all rock which will be processed into phosphoric acid in Florida.

The second one is to meet the State of Florida's effluent limitation which, in the case of mining and beneficiation, are more stringent than EPA's, but one of the ground rules of this study is, we stated that all local, state and federal regulations, which existed at the time of the study, would be met. That was one of the ground rules of the study, and we found that Florida's effluent limitations for mining and beneficiation are adequate to protect receding water.

The third one is to eliminate the conventional above-ground slime disposal areas. Now, this one does have an allowance for temporary storage of slimes, when the companies, the mines, get into situations where the percentages of slime are so high that one of the methods for using the slime for reclamation, instead of conventional slime ponds, cannot be used for that incremental difference in slimes.

So we're only allowing temporary storage of slime. For the most part, we're saying eliminate conventional slime-settling ponds.

The next one is to meet the existing Southwest Florida Water Management District requirements. That's being sort of repetitive, because I said one of the ground rules was to meet existing requirements.

But we're saying, in addition to that, which in many cases we feel will further increase water recirculation, recirculation of the water at the mines, which will in turn reduce the pumpage of water, in some cases, further than would be required by SWFMD. We're saying to provide storage for water recovered from the slimes by utilizing one of the methods of eliminating the slime pond.

So this will allow further water recirculation and decrease water consumption.

The next one is sort of --- We're saying to allow continued use of connector wells, but we do qualify this and say with careful monitoring during operation of these wells and careful monitoring to determine that once they're closed down, they're adequately sealed off.

Continued allowance of the connector wells; it helps the companies in that it's a good way to de-water the area to be mined; plus it is a water conservation measure. Instead of pumping the water out to surface streams for de-watering, the water is drained into the Floridan Aquifer, so we say to continue to allow that careful monitoring.

The next one, unfortunately, as Larry mentioned, the EPA Office of Radiation Programs provided the information on any of the radiological aspects of the study, but unfortunately the part on the guidelines on land reclamation are not yet complete.

They have been put out in draft form, but they have not yet been published as proposed guidelines in the Federal Register, so we're leaving that.

When these guidelines are finalized, they will be incorporated into the final EIS.

The next one is, in addition to meeting existing county,and state reclamation requirements, we're stating that during the site-specific studies, DRI and site-specific EIS's, to inventory existing wildlife habitat and wildlife populations and to take these into account in the mining and reclamation plan for any new source mine and assure that, during the mining process, this wildlife habitat and wildlife populations are protected.

And the next one, and final one,we have on new source mine and beneficiation plants is to protect or restore wetlands which fall under Section 404 of the Federal Water Pollution Control Act.

Okay. As I say, that was very briefly, but that was the requirements we have listed for the mining operations.

For any new source chemical plants, I should mention here that the proposed action, while we list requirements for new source chemical plants, we do not have any new source chemical plants projected.

All the information we were able to get from the industry and from the Bureau of Mines indicates that there currently is adequate chemical processing capacity in central Florida, which would last until the deposits in central Florida are mined out.

But in the study we did feel a need to list requirements in case some company sometime in the future does make application for a chemical plant.

The requirements for the chemical plant: First of all, in addition to meeting existing standards for performance for new sources on air, we're saying, since there are fluorine emissions from the gyp ponds, or the recirculated contaminated water systems, we're saying that the new source chemical plants will either provide for recovery of fluoride, which would be marketed as a product, or in cases in the future, if there is no market for this fluoride, at least for reducing fluorine concentrations in the gyp ponds, so that the fluorine emissions from the entire plant complex, including the gyp pond, don't exceed the standards of performance for new sources.

The way the standards of performance are currently written, they only include emissions from the stacks at the plant and not from the gyp pond.

We're saying to include the gyp pond emissions in the maximum allowable quantity.

The next one for chemical plants is to, in addition to meeting standards of peformance for new sources for water discharges, we're saying in addition to this to recirculate the non-processed water as well as processed water and to provide the same amount of surge capacity which is adequate for the twenty-five year rainfall event, to provide this same amount of surge capacity for non-processed as is currently required for processed water.

One further thing in addition to requiring recirculation of non-processed water, we're saying during these rainfall events, twenty-five-year rainfall events, or equivalent rainfall events which would require treatment and discharge, that more stringent requirements be set on the allowable concentrations for the pollutants in these discharges, based on protecting water quality in the Tampa Bay and Peace basins, which are the two basins where any of the industry in central Florida would discharge.

The next requirement for chemical plants, we're saying the gyp ponds for any new source chemical plants, the gyp ponds would need to be lined with an impervious material unless, in the site-specific study, it can be demonstrated that lining is not needed to protect ground water quality.

And then the final one would be, in the site-specific studies, to encourage recovery of uranium from the phosphoric acid in any new source chemical plants.

Okay. As I said, that is very briefly hitting the high spots of the conclusions of the study or the proposed action for which this draft EIS lists environmental effects.

I'll turn it back over to Mr. Traina.

MR. TRAINA: Thank you, Mr. McNeill.

Before I call for comments, I'd like to just make some of my own comments with regard to public participation.

Not only is it the policy of EPA, its own rules and regulations, but public participation is called for in various federal acts that EPA operates under.

The Federal Water Pollution Control Act, the Clean Air Act, as well as the National Environmental Policy Act, all have provisions instruction EPA to involve the public in its decision making, and this is the reason we're here tonight, and we've had public hearings on this subject in other areas this past week, so that I could say in a way that the public is almost obligated by law to come forward and make some statements to us tonight.

We certainly want to hear from you.

With regard to our own rules and regulations, for the record,, notice of this public hearing was published in the Sarasota Herald-Tribune on May 8th, 20th and 21st, and in the Tampa Tribune and Lakeland Ledger on May 7th and the 21st.

In addition, copies of the public notice were mailed to each of those individuals and organizations on the EPA mailing list, as well as to all the appropriate local,, state and federal agencies.

I would ask that those of you who would like to make a statement, if you haven't already done so, please fill out a registration card. From these cards I will call on in asking people to come forward.

We're not under any formal rules of evidence here. We want you to come forward; if you would, state your name,, if you're affiliated with an organization, who that organization is.

I would also ask, too, that for those of you, even if you're not making a statement, fill out the registration card.

This will give us a list of individuals that we will mail our final determination on with regard to the study.

There's also a place on this card if you want to get on the EPA mailing list to receive information regarding other activities EPA has in this area.

With that, I might also comment, too, that we're having this hearing recorded tonight. There is a court recorder here.

Copies of the transcript will be available in our offices in Atlanta. Any of those who'd like to make some special arrangements with the court recorder to get your own transcript, of course you're welcome to do so.

At this point I'd like to call on Commissioner Robert Shedd, Charlotte County.

MR. SHEDD:

Mr. Chairman and members of the Hearing Commission, I would like to read a statement that was developed by Bucky McQueen, who you were already introduced to, by Mr. Mike Best, who is the Senior Planner with the Charlotte County, Punta Gorda Planning Council, by Mr. Rick Cantrell, who is with the Florida Department of Environmental Regulation, and myself.

The statement was developed at the direction of the

Charlotte County Board of County Commissioners.

The Charlotte County Board of County Commissioners, at the regular weekly meeting of May 23rd, 1978, requested that a statement for public record be made at the Environmental Protection Agency's public hearing.

Several of the following concerns were expressed at this meeting.

(1) Without adequate, proper and timely monitoring by the federal and state environmental agencies, all proposed actions and existing rules, regulations and requirements are worthless and ineffective.

T-50

Therefore, we request that adequate surveillance programs be instigated with an appropriate funding level in order to accomplish those goals which should be of the highest priority.

(2) We endorse the recommendation that process modification and control of equipment for existing operations to meet all water discharge requirements by 1983 be implemented. Only a small percentage of the total mining area and impact operations will be new sources.

(3) Encourage and assist in the compilation of more specific and useful information on the quantity and usability of the marine biological information for the Peace River, Myakka River and Charlotte Harbor.

In summary, since discharges that occur on the

1-222

headwaters of the Peace River may have an adverse impact on our community, we are extremely concerned with the contamination of our surface and ground water.

The highest priority should be placed on an expanded monitoring program in order to prevent potential devastating slime spills.

Of equal concern is the monitoring of critical synergistic mineral and nutrient combinations which can lead to massive algae bloom.

Sincerely yours, Robert Shedd, representing the Board of County Commissioners.

Thank you.

MR. TRAINA: Thank you, Commissioner.

May I ask, Commissioner, is your comment with regard to the existing source -- that the recommendations of this report be applied to existing sources? Is that ---

MR. SHEDD: By 1983.

MR. TRAINA: By 1983.

MR. SHEDD: Yes, sir.

MR. TRAINA: Do you have a copy of your statement so I can give it to the court recorder?

MR. SHEDD: Yes, sir. We have an orginal, which I'll give to you.

MR. TRAINA: All right. Fine, sir. Thank you very much.

Councilman C.R. Johnson, City of Punta Gorda.

MR. JOHNSON:

Chairman and members of the Hearing Commission, the City of Punta Gorda sanitary plant, built during the period 1971-'73, was at that time held out by EPA as a major advance in waste water treatment.

It is now operating under a consent agreement because of its inability to consistently meet the effluent nitrogen limits imposed by the 1971 Wilson-Grizzel Act.

Although break point chlorination would meet the letter of the law, we find little enthusiasm for this because of, first, its cost and, second, its adverse effects of the by-products on the marine environment.

As an alternative, the City is developing an effluent land spreading program. Even with federal participation, this multi-million dollar program represents a very significant financial burden for this community.

This would be commendable if such action resulted in a real and substantial improvement in the environment of Charlotte Harbor.

However, we are advised by recent 208 studies that 85 percent of the pollutants entering Charlotte Harbor are by way of the rivers, and from a technical point of view the contribution of our sanitary plant is insignificant.

Thus, our efforts will be wasted unless a major effort is made to reduce the pollution of our rivers.

In closing, I wish to emphasize that these studies, reports, guidelines and recommendations are of no avail unless a properly-funded and staffed monitoring program is placed into effect to enforce the laws relating to discharges into our rivers and harbors.

T-51

Thank you.

MR. TRAINA: Thank you very much, Mr. Councilman. Again, do you have a copy of your statement?

I just might comment to you that as the Enforcement Director, I certainly --- I do know the value of monitoring and surveillance. Without it, you don't have an enforcement program.

Thank you both, gentlemen, for coming.

Joseph R. Roach?

MR. ROACH:

Gentlemen, I am Joseph R. Roach, a resident of nearby Sarasota County, appearing here this evening to register my concern as to some of the projections of the referenced draft impact statement as they relate to the Peace River.

My concern is based partly on the possibility that the scenario on which the Environmental Impact Statement is based may no longer be operable, and also that there may be inaccuracies in some of the underlying work papers.

The most significant matter affecting the statement is the fact that the ink was hardly dry on the scenario when actions by the EPA Administrator and the phosphate industry virtually assured that the operating restrictions of the scenario cannot be attained by the administrative procedures contemplated.

Firstly, as to phosphate chemical plants, the scenario contemplates much more protective effluent limitations than are contained in either the federal or state rules.

However, it is conceded that these can only be legally applied to new plants and, since the study finds that there will probably never be any new plants in the area, they may never be applied. T-52

What we are left with, then, are the existing plants subject only to the EPA 1976 final rules, which have been adopted by reference by the State of Florida, and that contain only some very liberal effluent concentration limitations, identifiable for both BPT, existing source, and BAT, new source, and which are not within a country mile of the protective limitations proposed by the scenario and used in the projections.

This fact will take on even greater significance when we get into some possible inaccuracies in the working papers.

As to the mine effluent limitations, repeat mine, the scenario and all the impacts developed rely on the more restrictive effluent limitations adopted by the State of Florida in 1977. T-53

However, these rules are being aggressively litigated by the industry at both the state and federal level.

On January 16th, 1978, the EPA and DER issued jointly NPDES permits to five existing phosphate mines, which incorporated, for the first time, the more protective BPT effluent limitations of the State of Florida.

I am advised that the mines involved have requested adjudication, thus staying enforcement of these effluent limitations.

On February 16th, 1978, EPA, Region IV, issued a notice that certain of these effluent limitations were to be made binding on those mines even during a ten-year storm, which could contradict both Florida and federal guidelines and assure that the mining companies' plea for adjudication will be successful.

If this were not enough, on March 6th, 1978, the EPA Administrator signed the final rule for phosphate mining BAT which sets BAT, new source, effluent limitations for Total Suspended Silence at 30 milligrams per liter, 30-day average, which is identical to the BPT, and twice as T-54

1-227

permissive as the Florida rule and totally silent on any other pollutants except pH.

In his findings, the Administrator, in effect, denied the request for more protective Florida effluent limitations, which were requested by certain Florida regulatory officials, during the comment period for the proposed rule; thus, practically assuring the success of the phosphate mine adjudication proceedings.

T-55

Further, by promulgating a BAT rule with identical effluent limitation concentrations of the BPT rule, the Admistrator is saying that the industry is already operating under BAT conditions, no further improvements are economically achievable, which happens to be in conflict with the information in the impact statement, in my view, and therefore no improvement may be expected in 1983.

It is my view that the scenario on which the whole impact statement was developed is now inoperable, the impact statement as presently drafted is incorrect and, as a matter of fact, seriously understates the environmental impact on surface waters which will prevail in the real world of environmental regulation if this draft statement is adopted.

As to possible inaccuracies in the working papers underlying the statement, I am referring primarily to Water, Volume V, Water Quantity and Quality, Section 1, draft January 1978.

On page 1.140 the effluent limitations used in the projections are set out which, in my previously explained view, may no longer be applicable.

On page 1.142 the statement is made that "Because of the unavailability of point-source discharge projections for a large portion of the seven-county study area, the effect of meeting BPT and BAT regulations will be analyzed only for the phosphate industry loadings to stream segments in 1985 and 2000 under base line conditions."

Continuing the quote, "Projection of the existing base line is based on the assumption that only phosphate mines permitted as of August 1st, 1976, will be allowed to continue operations --- "

Nowhere in the scenario or anywhere else can I find authority for this assumption. Certainly, any projection based on such an assumption will be inaccurate and materially understate the environmental impact.

If I may digress from my written statement a moment, in light of the information of the consultants imparted here earlier in the evening, that they do have authority for that basis, I would still question the projections when they don't take into consideration any future mines at all and merely project what the existing mines are going to be permitted to discharge in the next several years and ignore the potential of probable discharges, which will be permitted new mines coming into the district.

On page 1.144 using highly inferential assumptions, the working paper estimates the phosphorous loading into the Peace River by the industry.

The industry total of some 4,055 pounds per day does have a remarkable correlation to the EPA, February 1977 study.

However, little solace can be found here since the working paper attributes nearly 70 percent of the phosphorous to mines, while the empirical EPA data seem to indicate that nearly 90 percent of the total phosphorous loading can be attributed to chemical plants.

With this anomaly unresolved, the whole projection needs review since the questions of where the pollutants are originating can make a profound difference in the quantification projections.

On page 1.148 we find the consultant's conclusion that the "high nutrient concentrations are indicative of runoff from the large amount of agriculture in the study area."

This statement is in serious conflict with the conclusions of the Southwest Florida Regional Planning Council, 208, Charlotte Harbor Water Quality Study and

T-56

recommendations which indicate that "total phosphorous loads from the phosphate industry are presently about 52 percent phosphorous loads from the Peace River and about 45 percent of the phosphorous loads from all sources to the uppermost part of Charlotte Harbor."

The 208 consultants further recommend a reduction of phosphorous loadings from all sources of 83 percent.

A local independent laboratory, using different data and comparing water quality in presently undisturbed streams draining phosphate rich land in this area, suggest a reduction of phosphorous concentrations in the Peace River of 69 percent.

This is a rather remarkable correlation of results in view of the fact that entirely different water samples and methodologies were employed.

In conclusion, it is my view that the impact statement has been fatally flawed as a result of the basic scenario having subsequently been rendered inoperable and also the possibility of error in the impact projections in one or more of the working papers.

It is my considered opinion that the need for a new scenario has been dictated by subsequent events and that the statement needs substantial revision in order to accurately reflect the real world environmental impacts that are going to occur.

By a correct reassessment of the phosphate industry impact on the water quality of the Peace River under the current status of regulatory capabilities, the integrity of the original EIS scenario for more protective effluent limitations can be restored and the necessary controls on existing, as well as new, sources established as provided under Sections 208, 302 and 303 of the Federal Water Pollution Control Act.

Now, gentlemen, I have almost all the documentation underlying this presentation here tonight, and I'm available for questions.

MR. TRAINA: Thank you.

I'd like to ask you one, Mr. Roach, or, make a comment. I think the report does recognize the fact that EPA's effluent guidelines are less stringent than the state's effluent guidelines, and therefore, the report does recommend, for new sources, the state limits apply.

We do recognize the differance in the two. The report is recommending that the state's limits apply.

MR. ROACH: Yes. That's for new sources.

MR. TRAINA: Yes, sir.

MR. ROACH: But we still have the old sources.

MR. TRAINA: We understand. The report is only addressing itself to new sources, and for those new sources, the more stringent standards would apply.

MR. ROACH: Thank you.

MR. TRAINA: Thank you, sir.

Any questions?

(No response)

Thank you very much, Mr. Roach.

Dr. M.H. Bigelow?

DR. BIGELOW:

Mr. Chairman, and ladies and gentlemen, most of those people don't know me, and that's the hot seat; I used to sit there for four years.

This is going to be a little history, because I think I'm the grandfather of this outfit with respect to the Charlotte Harbor.

First of all, my Ph.D. is in science, and I'm a retiree of the fifth largest chemical company. We won't name names.

I'm also secretary and a member of the board of directors of the South Central Florida Health Systems Agency, which covers the ten counties, of which a couple are involved tonight, but I'm not speaking on their behalf, because they have committees involved.

In 1943 when I was in the Army, I was given a B-25 and some men and a bunch of DDT that we had stolen from the Germans and asked to use this area as a study for

1-233

the efficiency of DDT to take care of mosquitos and other insects.

And we were based at Bushnell. We used to fly over this harbor at 175 feet almost daily. You could look down, and all you could see was beautiful, clear water -- no slime, lots of fish, and based on that I moved to Charlotte County fifteen years ago.

I'm practically a Charlotte Countian, not by birth, and I decided this is going to be a wonderful place to fish, a wonderful place to live, and then I discovered that we no longer had clear water. It was brown, but it was brown originally from the tannic acid, and the fish were rather scarce, and I thought it'd be a good idea to try to get our harbor back up to where it was, as a fishing area.

And in 1970 I established what is known as the Charlotte Biochem Research Laboratory, Incorporated, on which board I have some very prominent engineers, the resident engineer that put a rotunda on this map, with the idea of using this harbor to set up new fishing, a new fishing empire, if you want to call it, bringing in new types of fish, not just sticking with mullet, and what have you. I wanted to get rid of the pink shrimp and get down to the Japanese prawn, which don't have to go through five cycles, don't have to have the black mangrove enzyme for the eggs

1-234

to continue with their growth.

So I set up, before doing anything of the nature of bringing in any exotic fish, test stations throughout the harbor, because I realized what we needed to know was the background of this body of water, changes in pH, changes in solidity, changes in tepidity, changes in microorganisms, changes in the amount of slime that was built up, and what have you.

Because without knowing that, to try to bring fish here would be trying to do something stupid.

I won't give you the problems involved in trying just to maintain a dozen stations for testing.

The state wasn't very cooperative. The local people liked to steal my markers, because I'd have a special kind with sea lamps on, but the thing that bothered me more than anything else was the changing characteristics of this body of water.

And we are at a point right now, with our Charlotte Harbor, that reminds me of the situation that it must have been like when this world started creating life -- a large body of protein soup in which nothing was living, but something came along -- maybe the clouds separated and a light ray came through -- and catalyzed activity.

And right now, as far as I'm concerned,

this Charlotte Harbor here -- what is it, 163 square miles of water? -- it's just that; it's a protein soup, and I am worried to death that something is going to come along and almost overnight catalyze the activity of this harbor into the growth of materials that we do not want.

Now, it doesn't take very much. Now, in my studies -- of course, I ran studies on trace elements, and what have you -- it doesn't take very much to do this.

For example, in the dental profession right now they have a mixture of uranium methacrylate, a solution, which they can put in your tooth for a filling, and it only takes one wave length, 474 nanometers, to catalyze that into a high solid. Nothing, either side, will change it.

And one little thing --- I'm not going to point the finger at the phosphate people or the people whose septic tanks run into our harbor out here or the people that come into our place and put chemicals in all of our canals to get rid of phyceae.

Somebody one of these days is going to put that catalyst in, and it's going to make the red tide that we see out in the Gulf, which is due to iron, it's going to make that look silly compared to what is going to happen in this harbor.

I don't want to be an alarmist, but I --- I

1-236

have stopped. I'll work out there.

After December 1971 when I couldn't find my samples anymore because they were all sludged in under phosphate spills ---

But I just would like to have the people that are engaged in all this mining up here, all these chemicals, and the people that come around here and treat our roofs with chemicals, knowing it's going to run off in the water, to keep in mind somebody one of these days is going to put the catalyst in that water.

Thank you.

MR. TRAINA: Thank you very much, sir.

(Applause)

MR. TRAINA: S.R. Stedman?

MR. STEDMAN:

I'm the president of the Venice Area Audubon Society, and I've got a few things here that strike me as a little bit peculiar.

You have several alternatives considered. When you have an alternative, you use one or the other, but now it seems to me B and C are to be combined, instead of ---

In other words, if you use B, then you can't use C. If you use C, you can't use B.

It seems to me that ought to be one alternative instead of two.

MR. TRAINA: Can you reference that, sir? I don't know exactly what area you're talking about. Maybe Mr. McNeill can clarify that.

MR. MCNEILL: I think I can clarify your comment for Mr. Traina anyway here.

Mr. Traina, what he's saying is, under the alternatives considered, we have listed the scenarios that were looked at throughout the study, and we had six scenarios.

Let's see, are you talking about this?

MR. STEDMAN: No, I'm talking about B and C. I don't see why they should be two different ones.

MR. MCNEILL: Okay. Let me go ahead and finish what I was saying.

We did not select one of those six scenarios to become the basis of the impact statement.

What was finally selected was a combination ---

MR. TRAINA: That's what I thought it was.

MR. MCNEILL: -- of, really, the four middle scenarios, and I think ---

Does this help some?

MR. STEDMAN: All right, yeah.

MR. MCNEILL: You're right; your comment was right. We didn't select one alternative. We selected a combination of alternatives based on what were the best aspects of each of the scenarios.

MR. STEDMAN: All right.

MR. TRAINA: So they were combined, sir.

MR. MCNEILL: They were combined, right.

MR. STEDMAN: Well then, you know, I'm looking at this chart you have here showing the phosphate production, and you have said an awful lot about the economics of it, and of course economics are very important to this region.

But we have our curve going up and then down again.

Why couldn't it have been a straight line curve or a straight horizontal line?

My idea is when one phosphate mine is used up, open up another one instead of piling them all on.

Now, at the end of all this phosphate mining you're going to have an awful drop in the economy. At least this way, if you had straight production, you would extend the production over a longer period.

Now, there's a statement in here also about it's uneconomical to extract fluorides. I think that's entirely beside the point. T-57

It's uneconomical to extract fly ash in a coal burner from a stack that burns coal, but it has to be done. I think fluorides have to be done, whether it's economical or not.

And there are a couple of places in there where you mention the information isn't sufficient to make a conclusion. Then you make a conclusion, but it's always in favor of the phosphate people.

That's all I have to say. Thank you.

MR. TRAINA: Thank you very much, Mr. Stedman.

(Applause)

MR. TRAINA: Samuel Wapner?

MR. WAPNER:

Members of the board, my name is Samuel Wapner, and I speak as a citizen and resident newly arrived, who came into Florida about the middle of November of '77.

I feel rather humble in following Dr. Bigelow, because I know something about his background, and also I must say I don't know whether my voice is carrying or not ---

MR. TRAINA: Yes, it is.

MR. WAPNER:

I have not attended previous meetings; therefore I'm not in a position to comment on your impact statement, which is very comprehensive and would require quite a bit of study and reading and review by me before I could properly make the sort of statement that I'd like to make.

In lieu of that, would I be permitted to make some general observations?

MR. TRAINA: Certainly, sir. That's the reason for the meeting tonight. I might also add if you'd like to take some time later, we will be receiving written comments after this meeting.

I'll tell you later, I'll tell everyone later where to address those written comments, but certainly we would like to hear general observations.

MR. WAPNER; The first question I'd like to ask, since all of my information is based on what I've read in the newspaper, is it a fact that Florida has resources of phosphate calculated on a world basis of somewhere between 2 and 4 percent? And yet our industry is producing approximately one-third of the world's output of phosphate.

T-58

Is this a fact?

MR. TRAINA: I don't know whether we're in a position to comment or answer your question, sir.

MR. WAPNER: Am I in the ball park? Is this more or less generally so?

MR. TRAINA: I think Mr. Stowasser will have to comment on that. Mr. Stowasser has some information on that.

MR. STOWASSER: Mr. Wapner, we estimate that we have in the United States perhaps 3 and a half to 4 billion tons of phosphate reserves at today's cost and selling prices.

1-241

I don't have a crystal ball clear enough to tell you what the cost and prices will be in the future.

However, I would expect that these reserves, economic reserves, will increase in the future.

MR. WAPNER: Well, unfortunately, you've not answered my question pointedly. What I'm trying to arrive at is what reserve do we have here in Florida compared to the world reserve?

Now, I know that economics are a very important part, and I'll come to that in just a moment.

MR. STOWASSER: To be more specific, economic reserves today are estimated somewhere 1.5 and 1.7 billion tons in Florida.

MR. WAPNER: Well, this still doesn't give me the picture, so I'll have to make an assumption, rightly or wrongly.

MR. STOWASSER: Mr. Wapner, we may have anywhere from 20 to 30, that broad a range, of economically attractive phosphate reserves in the world.

There's no one who knows the answer to that question. We'd like to know the answer as well.

There's a great deal of material, and it probably will be developed as time goes on.

MR. WAPNER: Well, what I'm trying to say is that with a limited amount of phosphate reserves, we are producing, in my opinion, too much, and we are following the route of the petroleum industry, which, in my opinion -- remember I'm expressing an opinion -- I think we are following the route of the petroleum industry which, with the encouragement of the automobile industry, produced in great abundance.

We had cheap petroleum products. We use them, not only for automobiles, but also in the chemical industry, and now we find ourselves more or less at the mercy of certain foreign nations who raise prices in not the customary business-like fashion, but at one point I think they jumped prices approximately 400 percent.

Now, if our reserves in Florida dwindle so low that Morocco or some other country can act in a fashion similar to OPEC, I think we are defeating our own purpose, but we'll come to that a bit later if we're talking about money.

Before I came to Florida, I was a resident of New Jersey, which is unfavorably referred to as the cancer state, and perhaps some of you folks have read about the recent incident at Rutherford, where they're finding a high incidence of cancer in young children, a most dreadful situation.

In the neighboring state of New York, there is a county -- its name escapes me at the moment since New York

1-243

State is a rather large state -- but in this particular county, they have a large deposit of radioactive rock, and unfortunately in that particular county there's a very high incidence of, shall we say, defective children.

I speak on behalf of no organization, but for myself. Unfortunately, I am the father of a retarded daughter, so this rather hits home, when for one reason or another a so-called defective child is born, which is both a burden to the family in many ways and also to the community.

Now, when we come down to the question of economics, I have seen formulas that state one has to offset tourism and agriculture versus the income which comes from the phosphate industry.

Now, please understand my position. I'm for free enterprise. I worked in industry for many years, and I approve of our current manner of doing things in general, but it seems to me that this particular formula is lacking one very important element. Tourism plus agriculture is not the total side of one formula in the equation.

To that one must add new residents. Now, who will these new residents be? By and large, retirees, many of whom are rather vulnerable to cancer, and I speak whereof I know.

In addition, we have young couples who are just beginning to raise a family. A pregnant woman, again, is very vulnerable in that either she or her offspring might produce an undesirable characteristic.

Therefore, I say to you, as a new resident, in weighing the advantages of the phosphate industry, and I don't want to belittle their contribution in the past, and I don't want to eliminate them, either --- I say to you let us take a balanced view in promulgating new regulations in enforcing these.

As our commissioner said, without enforcement, you're absolutely nowhere. You can have the best laws on the books, but unless you have properly trained personnel who will enforce these statutes, you are nowhere at all.

So I close by saying I'd like to have this particular group, in reviewing the whole question, take a rather balanced point of view of this most serious question.

Thank you. I have no prepared statement. This was spontaneous.

MR. TRAINA: Thank you very much, Mr. Wapner. We appreciate your coming forward.

(Applause)

MR. TRAINA: M.W. Chesson?

MR. CHESSON:

Mr. Traina, members of the panel, my name is

1-245

Maywood W. Chesson, Jr. I was recently employed by Mississippi Chemical Corporation as Manager of Phosphate Project Development, and am in the process of changing my residence from Lake City, Florida, to Wauchula, Florida, in Hardee County.

Mississippi Chemical Corporation is a farmer-owned cooperative based in Yazoo City, Mississippi. Our principal business is manufacturing and distributing fertilizers to approximately 250,000 farm operators located largely in the southeastern states.

Mississippi Chemical Corporation's major production facilities include nitrogen plants in Yazoo City, Mississippi, and Donaldsonville, Louisiana, potash mines and beneficiation plants in New Mexico, and in Pascagoula, Mississippi, a large phosphate rock processing plant with associated granular fertilizer facilities to prepare the final products containing NPK-nitrogen, phosphorus, potash, as required by our farmer-owners.

A few years ago, Mississippi Chemical became gravely concerned about a secure long term supply of phosphate rock.

In 1975 MCC arranged to acquire a large phosphate deposit on some 14,800 acres, just west of Wauchula in Hardee County.

Since that time, we have been involved in appraising the deposit, evaluating various mining and beneficiation processes, assessing environmental matters, pursuing permits, and worrying about economics.

We find many alternatives with some fascinating features, but when the bottom line reads higher cost, without compensating benefits in the production of food and fiber, we must restrain ourselves.

Unless something of real value is obtained when we expend labor, resources, dollars, we contribute to inflation which many authorities consider to be our gravest threat today.

MCC's phosphate development is a new source. Consequently, the areawide EIS has been viewed with much concern.

We recognize the objective is to determine and appraise the effects of the phosphate industry's southward movement on a seven-county area and on a cumulative basis.

We appreciate the importance of the study, but have been very apprehensive about the findings because of the great complexities of the study.

Mississippi Chemical Corporation is a member of the Florida Phosphate Council and supports the council's observations and comments, which you heard last night, and which will be supplemented later in the written record.

Nevertheless, there are several points which warrant specific comment as they particularly concern MCC:

First, an areawide study covering some 3.5 billion acres in a period of time greater than a hundred years causes one to lose perspective for a specific 15,000-acre site and what to do now.

We urge that no action be taken as a result of the areawide EIS that will prohibit proper action on a specific site at a specific time following a thorough study of the then available and discernible alternatives.

One thing we can place great confidence on is man's ability to develop new and better ways to accommodate his changing desires. T-59

Until the specific site effects are determined and evaluated, none of the alternatives should be obviated or restricted.

Areawide EIS findings and recommendations should be set forth as guide posts for future site selections, not prohibitions or prerequisites.

Second, elimination of dryers may be a meritorious objective under some circumstances, but it could be unwise to limit the determination on only the energy of transporting water in wet rock versus energy for drying.

1-248

There are many other very important considerations that also concern energy. For example, introduction of additional water in chemical plants with wet rock where climatic and process conditions require it to be chemically treated and discharged can cause very serious effects and consume a lot of energy.

Also, adverse effects on chemical processes can result in higher raw material losses, which consume a lot of energy.

Again, specific cases should be determined on factors relating to that specific case, using the areawide findings as guide posts.

Third, elimination of above grade clays storage. A great amount of knowledge has been developed in this subject during the past few years, but often, as our base of knowledge broadens, our rate of learning is increased.

Future decisions and actions should be based on an evaluation of all known alternatives in the light of knowledge existing at that time.

Certainly, no one wants to create earthen dams simply to store semi-fluid clays at super elevations.

It has been done only because it was the best available alternative at that time.

We are learning to reduce the hazards of

1-249

doing that, and we are learning also how to evaluate the overall effects of disposing the clays in that manner.

Some of these effects may be very valuable when we learn how to quantify them.

I'm not defending and trying to say that storage of clays above grade is the only way. I just say that is an alternative.

Also, we have other alternative disposal methods that are being developed that are, as yet, largely untried but appear very promising.

I urge you not to close out any alternative. Elimination of above grade clays storage is highly desirable, but simply may not be the best alternative for some site not yet defined.

Fourth, wetlands. A phosphate rock miner prefers to mine high, dry, sandy ridges. The wetlands are much more trouble, causing the cost of removing phosphate lying thereunder to be greater.

But phosphate can be recovered only from where it is. To leave it may cause an irreversible and irretrievable loss of a valuable resource.

The magnitude of this loss must be weighed against the value of the wetlands to be disrupted. Each specific site must be studied thoroughly, and all the pertinent facts considered, including the phosphate values,

1-25-0

the wetlands values, the restoration alternatives, and then determine the proper course of action.

I think in that matter we agree, and on that I really close, with the caveat that, while these remarks reflect some of our immediate concerns, MCC must reserve the right to comment upon any aspect of the areawide EIS during site-specific EIS reviews.

I thank you for considering our points of view.

MR. TRAINA: Thank you, Mr. Chesson. Let me just comment, because this bothered me last night.

I think Mr. Hooks raised it; I think it was raised the first night, while certainly this is an areawide document addressing general issuance, it's the intent of EPA to use this in a very specific manner when it begins to issue permits.

And I think to say otherwise would be misleading the industry and misleading everyone else here. We understand that when we look at a specific project, we're going to have to make some choices here, but things like elimination of rock drying and elimination of slime ponds is something that the Agency's going to implement through all the processes, enforcement and regulatory processes it has.

This is just not a report that's going to

1-251

look nice some place. This is a report that is intended to be implemented by the Agency.

I just wanted to make that comment, so that you all understand that while we look at these things on a case-by-case basis, certainly the recommendations on this document are going to be implemented within the regulatory structure of EPA.

Thank you very much, Mr. Chesson.

MR. TRAINA: Jim Kelly?

MR. KELLY:

Mr. Chairman, Jim Kelly representing the Charlotte County Conservation Council.

First I'd like to say that we are very proud of trying to maintain high environmental quality in Charlotte County.

The Charlotte County Conservation Council, with the aid of our Charlotte County Commission and our City County, our City-County Planning Council, our local legislative delegation.and working with the Department of Natural Resources, for some five years, we've recently completed state acquisition of approximately 20,000 acres of marshlands in Charlotte Harbor. Basically, we're talking about the beautiful, undisturbed shoreline from, more or less, Highway 41 bridge on west and south to the county line.

So we do feel that we do have something to be proud of, and we are concerned about the harbor. We feel it is probably the finest estuarine system left in Florida in productivity and absence of damage.

You just don't get that many miles of natural shoreline in many places anymore. We're talking about close to 30 miles of natural mangrove shoreline.

On the other hand, as Dr. Bigelow pointed out tonight, he said he's lived here for fifteen years. Well, I've lived here forty-four years, and I can see the water quality degrading in the harbor in spite of the protection of the natural shoreline.

When I was a little younger than I am now, we had a pier in the harbor in the Peace River, and I can remember in the spring of the year walking out on that pier and the water quality was so good in the spring, before the rainy season started, it was so clear, you could see the stripe on a snook's side in five feet of water, and now you can't even see the snook. In fact, now you can't even see the bottom.

So water quality ---

MR. TRAINA: You're still catching snook?

MR. KELLY: Well, yeah, we catch some, yeah. We give it the old college try there.

But water quality has --- We are concerned about it. We are naturally concerned about what happens in the upper Peace River and possibly what will happen in the future in the Myakka River when new plants or activities could develop, because, of course, what happens up there goes into Charlotte Harbor and affects us.

And as Tiny Johnson with our City Council brought out tonight already, according to the 208 study, why, about 85 percent of the major pollutants in Charlotte Harbor right now are coming from up river.

So we are concerned. Our primary concern in Charlotte County, as far as the phosphate industry is concerned, is water quality.

Of course, the things that Mr. McNeill brought out tonight in the proposed actions, we would certainly endorse these recommendations.

We're certainly for anything that would eliminate or drastically reduce the possibility of degrading the environment through phosphate spills or phosphate accidents or any other kind of activity.

So we are certainly in favor of these recommendations that Mr. McNeill pointed out tonight.

It only makes -- and this is something that's been brought out earlier, but I think it's noteworthy, bringing it up again -- it only makes common sense to have existing operations meet all air emission and water discharge requirements listed for new sources by 1983 as is recommended on page 1.74, paragraph 2.a. in your draft.

And of course, you've said tonight that in some cases maybe the state requirements are already more stringent. Well, in that case, naturally, the more stringent regulation should apply.

But we are in favor of incorporating these requirements by 1983 as your draft recommends.

T-60

Furthermore, it makes no sense to have rules and regulations if they aren't carried out. We would highly recommend that a very active monitoring program be initiated in all streams involved with phosphate industry discharges, as well as bays and other bodies of waters that these streams might flow into.

We would like to have an active monitoring program in the harbor itself, as well as Peace River and Myakka River.

On page 4.5 it states "Make unannounced inspections of company dams and company maintenance and inspection program to see that they comply with DER Chapter 17-9 requirements."

There again, this is just good common sense. May I put it on a personal basis for a few minutes.

We own a hotel, and we have a dining room and a kitchen, and we don't object to the hotel inspector, restaurant inspector, health inspector, coming out and making an unannounced inspection of our dining room or kitchen.

We feel that's in the best interests and the psychology of it --- That is really the only way to get the proper results. We never have had a health inspector phone me the day before and say, "Hey, Jim, we're going to have an inspection tomorrow. You better get the open metal cans out of your refrigerator and put them in some other container, non-metallic container, or you better make sure you've got thermometers in all your refrigerators and the thermostats read 140, or you better make sure there's no dirt in your meat slicer."

We never have had them do that to us, and we don't feel that we're being harassed, so we ---

MR. TRAINA: Mr. Kelly, that certainly is an enlightened attitude on that. I really appreciate hearing that as an enforcement official.

MR. KELLY: So we don't feel that the phosphate industry would be being harassed if unannounced inspections took place. In fact, that is the only way to have the psychological impact there so everybody's on the ball all the time, so we would highly recommend that.

1-256

This is in the best interests of public health and environmental quality.

In closing, we'd like to say that we certainly, and I don't mean to imply that we are picking on the phosphate industry, per se; we all realize we need phosphate for food production, and so forth.

However, as I brought out, we highly endorse and are in favor of any recommendations presented in this draft that would eliminate or cut down the possibility of environmental pollution, whether it be phosphate spills, slime spills, or pipes breaking or whatever, because, as much of us in the seven-county area know, we have had quite a history of these mishaps. In fact, we've got quite a little information on it.

So in closing, we'd like to say that maintaining a good environmental quality is good business for all Florida. We should all be interested in it.

Thank you.

MR. TRAINA: Thank you very much, Mr. Kelly.

(Applause)

MR. TRAINA: David Wilson?

MR. WILSON:

I'm David Wilson. I'm president of the Peace River Audubon Society, which is located right in

Punta Gorda. It has members from Charlotte and DeSoto County.

The most recent phosphate mine that I can see is Mobil Oil Company digging right up to the road three blocks from the southern residential section of Fort Meade in southern Polk County.

This area used to be a lovely oak hammock with trees, some fifty to seventy-five years old. I think it's one of the last in this area on Highway 17.

Homer, this is very bad PR. I'm talking to Homer Hooks.

I kind of feel like the lorisch in Dr. Seuss. Our proposal is for another means of reclamation of mined land, other than pasture land.

T-61

Before the mine is mined, I believe that the top soil should be stripped off and set aside, and after the mining, the land should be filled in and then the set-aside top soil should be put back.

And guess what I'm going to propose gets back on it? Then, instead of grass, plant native trees and shrubs. Pine would be a good start, and phase in the laurel and live oak, and let Mother Nature do the rest.

I mentioned this to you before, now, Homer, and you're going to hear it again.

1-258

Thank you very much.

MR. TRAINA: Thank you very much.

(Applause)

MR. TRAINA: Robert M. McQueen?

MR. MCQUEEN:

Homer does know that at the end of the Peace River, there is salt water, Homer. It's not all fresh.

Listen, I would just like to briefly say that it has definitely been an educational experience working on this study, and I am very pleased at the professional capabilities and credentials of all the people we've had to work with from TI, all the way to the Agency.

A couple of comments, just kind of in summary, is we are concerned about the water quality down here; not only is the Peace River a regional drinking supply but a supply for DeSoto, Charlotte, Sarasota, Boca Grande area, which is our prime concern.

We feel that the water quality issue primarily should be addressed in our 208 plans, which are contracted from EPA to our regional planning council.

The Central Florida Regional Planning Council did not address the Peace River in their 208 plan. We feel that it should be done.

On the other one, on you, Marvin, I personally feel that DER has not done their job on revision of 17-3. It's been going on for years and years and years, and it looks like it will be going on for years and years and years, on the reclassification standards, on the new standards of classification of not only the harbor, Class 2, Class 3 waters, but the Class 1 waters for a potable supply.

So you can pass that on to your boss that we have been pushing it down here. I know that there is a hold-up; it's a very controversial issue, but we feel still that somebody's going to have to make a decision sometime, and we would like to urge that DER press for this decision by the commissioners.

On the water quality aspect, the runoff from the streams is also a management responsibility of the water management districts.

We've been pointed out here that SWFMD and the water management districts were supposed to have been on this advisory board, and I would like to make the comment that, of all the meetings that I have been to -- now, if I'm wrong, someone correct me -- I have not seen the first representative from a water management district.

They not only are involved in the consumptive water use permits, but by the ruling of the Attorney General of Florida, they are also to be involved in water quality.

The district permits on consumptive water use permits must take into consideration water quality.

T-62

Mining in the wetlands, the definition of the three categories of wetlands. There's one little statement in there on Category 3 wetlands, which states -- I'm sure it's just an oversight or something -- Category 3 wetlands have insignificant hydrological functions.

There may be a degree of significance, but I don't think the statement "insignificant" to me --- This is improper and incorrect.

T-63

The existing sources of mines have a greater total effect on the Peace River Basin than all of the new sources that have been proposed, so we're concerned here that --- It's not what's coming on the line; we feel that that will be regulated, but it's what's already there that's going to continue to affect us down here, not only in water quantity and quality, which are prime considerations down here.

The running-stream communities we are very much interested in. Page 2.56 states " --- the running-water communities, streams and rivers, will experience the greatest effects from phosphate mining activities."

By the year 2000, 76,600 acres will be mined in the Peace River Basin alone. "This magnitude of activity

1-261

will measurably affect runoff patterns and flow regimes of headwater streams within the Peace River."

Now, this was quoted out of your study. And we have some questions that we'd like to throw back to Gene.

Are these decreased runoff figures stated based on annual flow, peak flow, or at low flow periods? And we think it should be clarified, because if they are at low flow periods, then it could reduce the flow in some streams and creeks by as much as 30 percent. T-64

So if you would just ---

MR. TRAINA: Gene, do you know the answer to that? Do you want to comment on that?

MR. MCNEILL: I'm sorry, I don't right now, but we will ---

MR. MCQUEEN: Gene, what has come up is some of the information, like you pointed out the other night, that it ended up in the draft EIS and was not in the working papers. T-65

And when we go back to try to find the information in the working papers -- like you said the other night, it has been revised and you're going to revise your working papers --

MR. MCNEILL: Right.

MR. MCQUEEN: -- and it was not clearly stated in this document.

MR. TRAINA: I think it'll be addressed in the final document.

MR. MCQUEEN: Yes, sir. So we just would like for you to clarify that fact.

Also, on these same lines, we feel this document, or I personally feel this document is not adequately addressing the impact on the retaining water requirements for the ten and twenty-five-year rainfall requirements on the amount of water to be withheld.

We feel that it should also address the total number of acreage that you're going to impound here, you know. This sounds good on the surface, impound and retain this much water, but I'm not sure that we aren't doing more harm than good by retaining thousands of acres of water that should go into a runoff.

So let's look at the amount of water, how much cubic -- or flow or surface acres, or however you want to measure it, that we're talking about, because it is a significant area, and this not only pertains to new sources, new sources you're going to a twenty-four-hour rainfall in a twenty-five-year period; on existing you've proposed it on a ten-year period.

T-66

So it's not only going to have an effect on the new ones but also the existing ones and, you know,

1-263

if it rains in Polk County, we'd like to have some of the water eventually end up down here, and it could have some adverse effect on our flow pattern.

We also wish to emphasize on site-specific EIS's that these questions be addressed in more detail, and also, another thing is all of this stuff is worthless if it's not adequately and properly monitored.

Our other prime consideration is the effect of mining on the Peace and the Myakka River basins, which we have now on the Myakka -- the effects on the Charlotte Harbor estuarine system, which has previously been discussed here tonight.

So with all of these, our whole philosophy, I think, here in Charlotte County, and you know, we aren't asking you not to do something that's unreasonable.

I'm in the ranching business, and no one more than myself knows that we need phosphate. I bought a lot today; Homer didn't send it down to me for nothing, so I know that we do need it.

So I think, to kind of summarize our philosophy, down here is we have a dependency on the fresh water, on the harbor estuarine system, and the people from Polk County and Hardee County, from DeSoto County, love to come down here and get the oysters. They love to come down here and fish, and they love to do all these other things, and we're all basically in the same system.

I think if we just kind of look at it from the Golden Rule, you know, do,unto others as you would like to have them do unto you, don't do anything upstream that you wouldn't want us doing down here.

So in light of that, I think we just kind of take that approach. I think the report is very good. It has some very good ideas in it, true. You can pick anything apart. If you get a document and you give 10,000 people a chance, everybody can pick one sentence they don't like.

I think basically it is a good document, and hopefully something we can live with. It does, as I've seen in the last three hearings, there are things pointed out, I think, that a little clarification is needed to be made on the document, but basically I think it is a very good document.

And that's all I have to comment on that.

Mr. Stowasser, one other comment, that I would like to comment on, the gentleman had a while ago. He asked you a question on the Florida reserves in comparison to the world reserves, production, and also what percentage of reserves we have.

On page 1.23, the statement is made in there that we are producing 80 percent of the US production and

33 percent of the world production in 1976, and I have been made to believe, through this two-year course of study, that Florida does only have between 2 and 4 percent of the total known phosphate reserves in the world.

MR. STOWASSER: Well, all I can do is give you the latest information that we have.

MR. MCQUEEN: Yes. Well then, this document should be corrected and updated if your figures are not true.

MR. STOWASSER: This changes every six months as more information is acquired. We can update the document.

MR. MCQUEEN: All right, sir.

MR. STOWASSER: Yes.

MR. MCQUEEN: All right, sir. I think you should, because it was pointed in there, it was documented, and it was dated, and that was my belief also on these figures, so you know, I realize that as new technology comes on and new reserves are discovered, etcetera, so ---

That's really all the comments I have to make, and we really enjoyed having y'all come to Punta Gorda. I know you couldn't even spell it before you came down here.

MR. TRAINA: John Hagan was sure that I could spell it and pronounce it.

MR. MCQUEEN: John taught you how. So listen, I've enjoyed working with the advisory committee and with EPA, TI, Larry and his people, and if you have any questions or if there's any way we can assist you, I think you pretty well know what our concerns are down here, being that we are at the end of the two basins, and we do have concerns over the water, primarily, the water quality and quantity.

Thank you.

MR. TRAINA: Thank you.

(Applause)

MR. TRAINA: I think Mr. Hagan ---

MR. HAGAN: I'd like to pursue one point.--

MR. MCQUEEN: Yes, sir.

MR. HAGAN: -- that you mentioned there. You mentioned that D and R, or, DER, I guess, has not aggressively pursued the reclassification of water.

MR. MCQUEEN: I did not specifically say the reclassification request. I said the re-writing of 17-3, because they aren't going to do anything on any reclassification until after they have re-done 17-3, and this has been going on --- It'll be three years in August this has been ---

MR. HAGAN: What is the objective here in doing the revisions of the standards and then doing the reclassification. I mean, what is the county's objective in aiming for a revision?

MR. MCQUEEN: Okay. We have never made a request for any revision to 17-3. This came, evidently, from the commissioners, or the man out in the hall will have to answer that question for you.

Our request down here was, number one, water classifications are based on usage. This is the only body of water now, I think -- Marvin, correct me if I'm wrong -- in the State of Florida that has been permitted to be used for a potable water supply that is not Class 1 waters.

There were a couple of others; the DER came in ---

MR. HAGAN: You're talking about the Peace River potable water?

MR. MCQUEEN: Peace River, right. For a regional water supply, they have received permits from the Department of Health, from DER, from the Corps of Engineers, from all permitting agencies, for a regional water supply on the Peace River, and our concern here is water quality on the Peace River.

The water in DeSoto County do meet the criteria for Class 1 waters, and therefore we felt that because it was being used for Class 1 waters, that the waters there should be reclassified according to their use.

MR. HAGAN: Why was the Peace River specifically chosen as the regional water supply source?

MR. MCQUEEN: It's the only supply of potable water that we have.

Now, if the industry supply in DeSoto County, all the area north ---

Well, to answer your question, we have found out that we cannot depend on a well system nor our canal system when the surface water breaks for a potable water supply based on our demand.

Plus, also we have some problems in our well system with salt water intrusion, and the next, the most logical place to go for them up there was the Peace River.

The recommendations now from the consultant that comes to the city -- I think the City can probably answer this better than I can -- is to first go to Shell Creek, and eventually we are recommended south of the river to go to the Peace River or the Telegraph Cypress.

So we're going to have to look sometime in the future, also at Peace River. Some stations upstream, as water was drawn out of the Peace River, and because of various events, phosphate spills, etcetera, they could not depend upon the surface water for a dependable water supply.

Then they had to go to a well, such as Arcadia, etcetera ---

MR. HAGAN: When you speak of a regional supply --

MR. MCQUEEN: I mean multi-county area.

MR. HAGAN: -- on this, you're talking about a multi-county area for DeSoto County ---

MR. MCQUEEN: DeSoto, Sarasota, Charlotte, and eventually going back into the Boca Grande system, which they're all on well fields. They're all on well fields in this part of the county ---

MR. HAGAN: Do you have a rough estimate of how many people would be served eventually by such a regional water supply?

MR. MCQUEEN: I can give it to you in capacity. Their initial permit from SWFMD is for 6 million gallons, and the plant is being built for a capacity of 30 million gallons, and as plants come on the line in increments and stages up to a capacity of 30 million gallons.

MR. HAGAN: Up to 30 million gallons a day?

MR. MCQUEEN: Yes.

MR. HAGAN: Out of the Peace River?

MR. MCQUEEN: Yes.

MR. HAGAN: Thank you.

MR. MCQUEEN: Now, that's just for this one utility company, only for the utility companies north of the river.

MR. HAGAN: Thank you.

MR. TRAINA: Thank you.

(Applause)

MR. TRAINA: Thomas W. Letson?

(Pause)

MR. TRAINA: Mr. Letson?

(No response)

MR. TRAINA: That concludes the cards of individuals who indicated by card they'd like to make a statement.

I'd like to ask at this time if there's anyone else who'd like to come forward and comment on what they've heard tonight or anything else relating to the study, anyone else who made a statement.

Yes, sir?

MR. MILLER:

T-67

My name is Jonathon Miller. I handed in a card; I guess it got lost in the shuffle, and you have my address because I spoke ---

MR. TRAINA: I'm sorry; it's right here.

1-281

MR. MILLER: You may have some other cards from some other people that'd like to speak.

MR. MILLER:

What I'd like to speak about this evening is the wetlands. Apparently, from listening to the other two hearings, the question of restoration of wetlands seems to be a sort of crucial point in this whole DEIS, and I think it's pretty easy to see why.

If, on the one hand, it is possible to restore wetlands, and the results are as good or better than the original wetland, then there's really not a lot of limits on where you should be mining.

In other words, if the phosphate industry can create a good wetland, then they can go into some of these wet areas and get the phosphate that's in there.

I know they said that they prefer to mine on the drier side, but the whole beginning of the industry was the history of them floating around outside the Peace River eating away at the plants and tearing up the stream bed, and that sort of thing.

So there has been a lot of phosphate connected with wetlands.

If, on the other hand, it's impossible, improbable or infeasible to restore wetlands, or if it turns out that they're inferior to natural wetlands, then it would seem that there would have to be some major limits to mining.

And I'm not solely here to speculate tonight on the feasibility of restoring or replacing wetlands. I am, I guess, naturally skeptical at some of the comments that were made yesterday regarding the state of the art in creating wetlands.

But what I really came here tonight to do is to talk to you or introduce the thought that natural wetlands --- They serve as indicators of the health of ecosystems in general.

And I suspect that when I talk about indicators of health, that may ring some bells. It's similar-type language that's used sometimes in regard to endangered species.

In other words, sometimes people talk about endangered species, and so these species can be used as indicators of the health of ecosystems.

In effect, there seems to be two basic different types of arguments that are used, and the arguments to preserve endangered species ---

One of these arguments is centered on the concept that the species itself is important. It's either important to the ecosystem, or it's important because we may get new medicine from it, it's important because we like it esthetically, but the organism itself is important.

But the other argument that you hear used is that the organism is important as an indicator. It may have importance unto itself, but it's important as an indicator.

So if we find that we have a viable population of wood storks in south Florida, then we can say that the hydro periods and the functioning of some of the wetlands down there are still somewhat viable, that basically the system's still working because the wood storks can still feed, so you use the wood stork as an indicator of the health of the ecosystem.

Now, both of these types of arguments are valid, and I'm sure you have lots of information that show the wetlands, in and of themselves, are important; in other words, they're important as a habitat, clean water, and all the different functions that we're all aware of as the importance of wetlands.

But what I'm asking that you think about tonight is what the health of the natural wetlands suggests about the ecosystem in general; in other words, what their function is as indicators, and I personally believe that we can infer five things, at a minimum, about naturally occurring, healthy wetlands, in this portion of Florida.

In the first place, existence of an established wetland community implies there's been some continuity; in other words, for as long as that wetland system's been there, there's been some continuity of conditions. I think that's important.

Another thing that I believe we can infer is that there's some hydrologic integrity of the surface water system and frequently ground water system.

In other words, there has to be -- I guess this is related to this concept of continuity -- but the water shed has to be working, water has to be flowing, surface water has to be flowing, it has to be moving toward these wetland areas, or it has to be moving into the soil and then moving laterially into the wetlands.

So when you see a wetland, you know that there is some hydrologic integrity in the water shed, that that wetland receives water from.

I think it also suggests that there's at least a potential for both healthy, fresh water aquatic systems and also healthy estuarine systems, so I list these as three and four.

In other words, if you have wetlands existing, there's a potential that you're going to have healthy aquatic, fresh water systems and healthy marine systems.

We know, when we channelize rivers, that we're really reducing the probability of having healthy, fresh water systems or healthy esuarine systems. You can see this in the Kissimmee River.

And I would also maintain that a healthy existing wetland says something about meteorological health. In other words, what I'm talking about is the weather patterns.

If the wetlands existed for a very long period of time, it says something about the rainfall conditions that have made that possible.

And as I tried to say in Bradenton -- I don't think I did the best job -- I'm not really satisfied with the half page that you devoted to climate in the EIS, and I'd like to suggest that you contact the Meteorological Environmental Research Laboratory in Coral Gables and talk to them to see what it is they might have about the possible effects of phosphate mining on the weather.

I'd also just like to mention in passing that in your reduced water use scenario, you're using rainfall data from the period of 1931 to 1960, and it was after that time -- or since that time, I should say -- that we have had lower than normal rainfall, and the question is whether this lower than normal rainfall is going to be the base line for the future, but I really don't think we should avoid looking at the 1960 or 1978 rainfall patterns and, you know, ascertaining what the surface water systems are going to be working on.

At any rate, what I'm getting at is I think that healthy, natural wetland systems tell us something, and I am opposed to their removal, even if they may be replaced.

Now, we have a court case, a suit, where a man is injured, and later he gets money back, and that's supposed to be some sort of compensation.

I don't personally believe that replacing a swamp forest with a forest of seedling cypress or other trees is a just compensation.

Now, the meeting last night in Bartow, the industry spokesman said they don't want to end up seeing isolated wetlands that are surrounded -- they're up on pedestals -- surrounded by dried out areas. These wetlands are going to decline. They didn't get to use the phosphate in the wetlands themselves, so are really of no use to anyone.

I don't think anyone does want to see this happen, so there's going to have to be some sort of insurances to, not only leave these swamp forests, but also insure that they're going to get some water, and I guess at the Bradenton meeting a woman brought up the point that we're going to be using this 5 cubic feet per second flow as some sort of determination of what's flowing water, etcetera, etcetera.

If you chop off all the upper portions of the water shed, you can reduce the flow sufficiently so that a stream that will fall below 5 cubic feet per second -- then that would be available for mining.

So what I'd like to ask you is that you think about requiring some sort of flow standards for mining. In other words, that during the mining process and afterwards, there would have to be a certain flow.

Now, it could be expressed on an average basis, a minimum -- I don't know how you do it. I don't know whether you want to base it on 1930 to 1960 or on more recent information, but I really think it's important that we do have some of these assurances that the surface water will continue to get into the streams and into the estuaries.

And I think we had a few other people tonight talking about this.

I hope you'll pursue this idea, some sort of guarantee or assurances that the flow rates will be maintained through the mining process and afterwards.

Now, the only other thing I'd like to talk about tonight is the concept of people who would like to stop using ground water resources and perhaps use more surface water; in other words, collecting rainfall, storing it and using that for a water supply.

What I'd like to suggest is that, rather than having people store this water as it falls and then when the rainfall exceeds this certain amount, avoiding that or getting rid of that to the streams, that you let the water that falls flow into the creeks and streams and rivers and estuaries, but when rainfall exceeds a certain amount, then a flood gate or a dam or a wheel, or whatever structure can be closed at some point, and people would be allowed to retain that excess water.

In other words, it may be possible to prove that water, fresh water, in excess of a certain amount does significantly stress an ecosystem. There may be some flood stage that can be proven to be --- An ecosystem can't really, it can adjust to it, but it can't adapt to it. It's too sporadic.

And so, if the water that people need, or they would like to start using more fresh water as opposed to ground water --- I hope you'll consider this concept of letting the normal rain patterns reach the wetlands and estuaries, and the greater than normal events, the out of the ordinary ten-year storm and twenty-five year storm, that those waters, once they exceed an average, that those can

1-289

be retained.

I'd just like you to consider that. I'd like to thank you very much for listening to me twice.

MR. TRAINA: Thank you very much, Mr. Miller, for coming twice. Thank you very much, sir.

Is there anyone else here that I haven't called ---

Yes, sir? Would you please come up and identify yourself?

MR. PEEPLES:

My name is Vasco Peeples. I live in Punta Gorda. I've lived here since 1933, before most of you came around.

I don't like phosphate spills. I don't like the things we've had to happen to us. I certainly believe in conservation, and I spend a good many hours a year studying our water problems.

Now, I'm not as highly educated in a technical sense as a lot of these people who spoke here tonight, so I can only make a practical comment.

We need the conservation. We need our protection, but we don't need stagnation.

And another thing, from a practical standpoint, I buy food, I have children that buy food, I have grandchildren that buy food, and if restrictions are ever made so strong that we couldn't get phosphate for fertilizer, you'd cut about 30 percent of the world's food supply off, and where in the heck would we be?

Where would the people living on a pension be if your food prices double? Talk about inflation, if we can't produce the food as much as we're doing now, we would have more inflation. Then we'd have a chaotic condition.

I want our waterways protected, but I don't want to see restrictions so restrictive until phosphate would not be available in quantities needed to fertilize our soils to produce food.

Thank you very much, sir.

MR. TRAINA: Is there anyone else who cares to make a comment at this time?

(No response)

MR. TRAINA: As I said at the outset, this is the third and final of the public hearings that we've had on this issue.

I must say, and I expected this having been to this area before, the depth of the comments have been such that I certainly learned a lot, and I do believe that the people that prepared this report have learned a lot, and while EPA was scheduled to put out this final report by July 31st, it's my view that we're going to have to go back and do quite a bit of further review of the various things in this report to address the comments, as they should be addressed, that were made during these last three days.

So I don't know whether or not, frankly, this report will be finalized by July 31st. We'll certainly shoot for it, but the main objective from here on in is to get back with our staff, our contractor, and to address the very significant comments that were made on these past three days, and I think that we have some way to go before we put a final report out in this area.

We are going to keep the record open till June 23rd to allow any of you here, who either have or have not made a comment, to write comments to us. Those comments should be sent to Mr. John Hagan, and John is the Chief of our EIS Branch, EPA, Region IV, 345 Courtland Street, Atlanta, 30308.

Mr. Hagan has a card that he'll give you if you want that later.

As I said, EPA takes these hearings seriously, takes your comments seriously. We will address the comments that have been made tonight and the other two nights.

Those comments and our response to those comments will be included in the final EIS, and when we make that determination and put out that final EIS, we will be sending that to all of you that have registered tonight, so again I would urge that if you want to get a copy of that document to please indicate on the card or something.

As I said earlier, it's EPA's intention that this document not be one that'll sit in the library somewhere; that, in fact, it will be used in the various regulatory actions and permitting processes in water and air and the other activities that EPA conducts in radiation and other activities involving the environment.

And we intend to use this document to base those regulatory decisions on.

And again, I'll stress to you all that this is a document that we are not taking lightly, and we have a number of comments, and the quality of those comments we're sure not taking them lightly, either.

Again, I want to thank the people here in Punta Gorda for inviting us. It's been a very useful period for us. We've learned a lot, and we hope that you have learned some, too.

This hearing is now adjourned.

(Whereupon, the hearing was adjourned at 9:40 p.m.)

-oOo-

C E R T I F I C A T E

This is to certify that the attached proceedings before THE ENVIRONMENTAL PROTECTION AGENCY, REGION IV in the Matter of:

Draft Environmental Impact Statement Public Hearing

Commission Meeting Room, Courthouse
Punta Gorda, Florida

7:30 p.m.

May 25, 1978

were held as herein appears and that this is the original transcript for the file of the Agency.

Anne Ja

ANNE JAPOUR
Official Reporter

-oOo-

SECTION 2

RESPONSES TO PUBLIC HEARING COMMENTS

(Note: Responses are numbered T-1 through T-67. Numbers are assigned to substantive comments in the margin of the Hearing Transcripts in Section 1)

T-1 and T-2 - Mr. Ernie Estevez' comments regarding need for generic habitat protection.

The U.S. Fish and Wildlife Service (FWS) report referenced is titled Fish and Wildlife Inventory of the Seven-County Region. It was compiled by the Archbold Biological Station, Lake Placid, Florida for the FWS. The report, as indicated in working papers Volume XI, Section 2, (Volume VII-NTIS), was intended as an up-to-date inventory of the 7-county region included in the Central Florida phosphate industry areawide impact study. It contains detailed accounts of important vertebrate species including potential effects of mining on them, as well as general recommendations for further wildlife surveys and mitigative mining methods. The report has not been published by the FWS and has had limited distribution. It was completed in September 1977 and made accessible only in time for a review prior to issuance of this EIS. The EIS and the FWS report are quite similar in assessment of the effects of phosphate mining on important wildlife species and habitats.

The proposed action herein calls for site-specific inventories of wildlife habitat to be mined or disturbed and mining and reclamation plans that take into account the protection and restoration of habitat so that important species of wildlife will be adequately protected during mining and reclamation. Thus, resource management, including wildlife and habitat management, will be addressed for each new source mining area and should include the preservation and restoration of movement and dispersal areas.

T-3, PP. 37-39, Bradenton Transcript - Mr. Ernie Estevez' comments on monitoring.

Monitoring by local and state agencies will certainly be necessary to assure compliance with the Proposed Action, as stated. The reliance of this EIS on monitoring does not necessarily mean that existing monitoring programs are adequate. As Mr. Traina stated at the hearing, citizen input is also needed to assure regulatory agencies at all levels respond adequately to statutory duties.

T-4, pp. 43-44, Mr. Fred Duisberg - (Request that permits only be granted for phosphate to be used in this nation only)

The Interagency Steering Committee determined at its first meeting that the consideration of limiting international trade of phosphate products was beyond the scope of the Areawide EIS.

T-5, Ms. Glorida Rains' comments, involving 26 points.

Point #1: No comment.

Point #2 takes exception with the EIS statement (based on the ORP-LVF report on radium in ground water) that radium in the ground water of the seven county area is not due to contamination from the phosphate industry. The available data base does not, in fact, substantiate widespread adverse impacts on the principal potable aquifers as a result of the industry, but the data base is very limited and the foregoing conclusion must be regarded as a preliminary, conditional finding. We would suggest that we all re-read paragraph three of the preface to that report (EPA/520-6-77-010). Additional studies are recommended, a point which many reviewers of the EIS also endorsed. The naturally high radium levels in Sarasota and Manatee Counties necessitate very stringent monitoring, coupled with action programs to eliminate or reduce water quality problems if they develop.

Points #3 through #8: See text of Volumes I and II, FEIS.

Point #9: Primary phosphate industry pollutants (particulates, SO_2, and fluorides) were considered with respect to State and Federal source emission standards and State and Federal Ambient Air Quality Standards. Emission reports indicate that all sources are in compliance with source standards, or on an approved plan to attain this status. Air quality data available for this study were for the most part 24-hour samples which preclude isolation of any effect due to diurnal inversions. Data from continuous monitors in Hardee county show little correlation between the highest readings and diurnal inversions. A more detailed modeling study of any specific area to isolate the short-term effects of diurnal inversions on local sources and the dispersion of their pollutants was beyond the scope of this areawide study. Such modeling should be part of any new source applications, and should involve adequate detail to address both long term (24 hour annual ave.) and short term 8hr, 3hr, 1hr) pollutant levels that would be associated with the source.

Point #10: To our knowledge, there has been no study to substantiate that "Samplings of seepage from inactive gypsum piles show that they yield... significant quantities of radium to surface streams and ground water for years after the pile is abandoned." Such a study should be done and efforts are underway involving EPA, the State of Florida, and selected gypsum ponds which will be studied intensively to determine whether ground water is affected and to what degree. Gypsum pond seepage to ground water has reportedly occurred in north Florida and North Carolina, but we have not seen the study results.

The Final EIS requires stabilization of gyp ponds upon abandonment P. 2.5, Vol. I).

Point #11: We agree with the statements made. The emphasis of gypsum tailings pile management should be on reduction or elimination of infiltrating surface water which, in turn, causes leachate production and need for interception and other control measures. Measures that result in dry tailings or at least greatly reduced water content will worsen radon exhalation. Management should strive for maintenance of optimum moisture content, i.e., wet enough to reduce radon diffusion and not so wet as to allow for gravity drainage or recharge through the pile.

The type of pond lining required will be determined in the specific studies.

Point #12: We agree with the recommendation for monitoring of ground water beneath gypsum ponds in limestone terrains. Ground-water sampling from wells located and designed for shallow ground-water monitoring has been a missing element at most, if not all, chemical processing plants. Proof that gypsum piles do or do not contribute to ground-water contamination has not been developed despite the long-term, widespread nature of the industry. This is unfortunate.

Point #13: As stated in the DEIS, no new phosphoric acid plants are projected. If one were proposed, the Final Areawide EIS, along with a site specific study and EIS would be required to assure adequate protection of air, surface water, and ground-water from radioactive or other harmful materials.

Point #14: Both in-plant and external air emissions of fluorides from the Florida Phosphate Industry decreased drastically between 1965 and 1972. Vegetative fluoride results indicate an increase of fluoride from 1973-1976, possibly due to lax maintenance of control equipment. Indications are that maintenance of control equipment improved significantly beginning in the fall of 1977. In any event, there have been no documented human health effects due to fluoride to either workers or residents. There have also been no documented reports of fluorosis in cattle since 1964, although there were some unsubstantiated reports in 1976 and 1977. There is indeed a need for further research on effects of fluoride on human health, livestock, vegetation, and wildlife.

Point #15: Proposed radiation protection recommendations are forthcoming. The recommendations are intended to provide health protection for persons exposed to radiation from phosphate-related land in Florida. They will provide guidance to Federal, State and local agencies and the public regarding unacceptable levels of radiation exposure in existing and new structures constructed on these land types. They should aid these groups in determining whether action is warranted to reduce levels. Guidance will be proposed at a later time to aid in radiological evaluation of undeveloped phosphate-related land. Such guidance would be directed to methods for estimating post-construction levels in structures to be built on these lands.

In developing the present recommendations only exposure due to radiation in sturctures was considered, since at present this appears to be the primary public health hazard. Potential crop uptake, soil runoff, and other pathways may be addressed at some future time if evaluations show these pathways to be important also. The limited available data do not show these other pathways to be a significant problem at this time.

Point #16: Limitations of the ground-water model are delineated in the EIS. We feel it is better to include results along with limitations than to ignore the results.

Point #17: Text revised. See Volume II of FEIS.

Point #18: See text of Volume I and II, FEIS

Point #19: See text of Volume I and II, FEIS

Point #20: In consideration of the fact that wetlands restoration has not been demonstrated and does not seem imminent, the proposed action calls for protection of wetlands included in Category I (those within and contiguous to rivers and streams having an annual flow exceeding 5 cubic feet per second and those determined to serve essential environmental functions). As pointed out in working paper Volume XI, Section 2 (Volume VII-NTIS) available maps of the study area do not adequately depict wetlands. It is anticipated that the as yet incomplete FWS (DOI) wetlands inventory will more clearly define wetlands habitats and their extent. Site-specific wildlife habitat inventories should also include characterization of wetlands on new source mining areas.

A reference to the possible effects of mining on adjacent lands is in working paper Volume XI, Section 2 (Volume VII-NTIS). As indicated in that volume (section 3) and in this EIS, Florida Development of Regional Impact (DRI) regulations do not mandate addressing the effects of mining on adjacent wetlands as similar effects (e.g., amount of drawdown, significance of flow regime alternation) on nearby water-bodies must be addressed.

Point #21: There is no data to support the thesis that wetland areas to be affected by proposed mining plans are critical recharge areas for the Floridan aquifer. Recharge is primarily a direct function of the soil leakance value and the difference between the head of the surface water table and the potentiometric surface of the underlying aquifer. The presence of surface water does not in itself imply that extensive recharge will occur in that area. (Volume V, Section 1/Volume V-NTIS)

Point #22: The current level of phosphate industry activity uses approximately 15% of the electricity generated in the Tampa area. Projections for future phosphate industry activity show an increase until 1985, followed by a general decline. This increase is not expected in itself to require any increases in generating capacity in the Tampa area, because of the constant level rather than peaking requirements of the phosphate industry. Hence, the future development is not expected to increase power requirements. Similarly for the case of transportation facilities, the level of phosphate industry activity will not change sufficiently to cause significant deterioration of the existing environment due to its activities. (Volume VIII, Sections 4 and 5/Volume I-NTIS)

The statement indicating that nutrient discharges are beneficial has been revised. In the case of estuaries ultimately receiving phosphate industry discharges, any additional plant nutrient material is indeed detrimental.

Point #23: The development of Tampa Harbor is clearly for the primary purpose of handling greater amounts of bulk cargo. Phosphate is the only significant bulk product under consideration for export from Tampa Harbor. It is unlikely the harbor would be developed to such an extent for general cargo only.

Point #24: See response to T-4

Point #25: See response to T-3

Point #26: The organization of the FEIS is responsive to this comment since the impacts of the proposed action are described in Volume I and the alternatives effects assessment is described separately in Volume II.

T-6 - Dr. Jeff Lincer's comment regarding inversions

The existence of diurnal inversions in Sarasota is not uncommon, as is the case throughout the 7-county study area. Since the purpose of this study was to characterize the future impact of the phospate industry on the area relative to the existing environment, the existence of pollution trapping inversions would have been of concern if large quantities of new phosphate industry air emissions were likely to be trapped in Sarasota. Existing air quality data indicate that this has not been the case in the past, due to the distance between major industry sources and Sarasota. The expansion of mining southward from Polk county will have the effect of adding a small amount of particulate matter to the atmospheric dust load, but this is generally a local effect and not apt to affect Sarasota. It is quite likely that the mining activity in the southern counties will only replace the dust currently generated by agricultural activity on the same land in some areas, and be less than agricultural emissions in other areas. In any event, it is highly unlikely that the proposed action will contribute measurably to an increased pollutant load in Sarasota, much less contribute to "episodes" due to trapping by the regular diurnal inversions.

T-7 - Dr. Lincer's comment regarding SO_2 and fluoride data

Any errors due to sampling methodology in the Sarasota SO_2 data would still place the ambient levels below 10 micrograms per cubic meter, which is well below the federal and state air quality standards. These standards were designed to protect the health and welfare of the population, and levels as low as 10 ugm/m^3 should be no problem when the state standard is 60 ugm/m^3 and the federal standard is 80 ugm/m^3 (annual average).

The fluroide data presented in Figure 1.3 was prepared by the DER. There appears to be no direct correlation between industry emissions and the reported vegetative levels. The sampling methodology and subsequent analysis used to generate the data shown in Figure 1.3 allow a considerable margin of error to exist within the reported numbers. A more extensive and better controlled method and sampling program for vegetative fluorides would be more meaningful than a "rigorous statistical examination" of the data presented in Figure 1.3, which was already examined statistically by the DER. (Volume VII, Section 2/Volume III-NTIS)

T-8 - Dr. Lincer's comment regarding recovering of uranium and fluoride

The site specific EIS's, to meet conditions of the Areawide, will establish the need to recover both uranium and fluoride. In the case of fluoride, it may need to be stockpiled if there is no market, but recovery will be necessary to adequately lower pond water concentrations.

T-9 - Dr. Lincer's comment regarding water use

Agency agrees with comment.

T-10 - Dr. Lincer's comment regarding EPA authority to change requirements for existing sources

The quote was taken out of context. EPA has no authority to change legal requirements for existing sources through the EIS. NEPA only allows development of EIS's for New Sources. Dr. Lincer is correct in that there are indeed provisions in the Clean Water Act for revising effluent guidelines. The requirement for new as well as existing sources to meet water quality standards, which may result in more stringent requirements than effluent limitations, has existed since initial adoption of water quality standards in 1969. This means that water quality standards already are a requirement for existing sources.

T-11 - Dr. Lincer's comment regarding habitat loss

Additional information on the Florida Department of Natural Resources (DNR) classification of endangered lands as well as other factors considered in evaluating the importance of wildlife habitat types is found in working paper Volume XI, Section 2 (Volume VII-NTIS).

T-12 - Dr. Lincer's comment regarding Myakka River State Park

Myakka River State Park has been added as an example of a larger park. Additional information on the park is in working paper Volume XI, Section 2 (Volume VII-NTIS). The Florida Division of Recreation and Parks cites it as one of Florida's largest state parks; it is by far the largest state park in the 7-county study area.

T-13 - Dr. Lincer's comment regarding area of wetlands affected

Future land use projections for the study area were based on the U. S. Army Corps of Engineers Four River Basin Study (1976). Both the extent of wetlands and water projected for the year 2000 are considered unrealistic based on land proposed to be mined and the state of the art of reclamation (working paper Volume XI, Section 2 [Volume VII-NTIS]). In this EIS, it is documented that an estimated 10,850 hectares, or 6 percent, of the area's wetlands would be lost from mining; however, unrealistic projections of future areawide wetlands extent precluded an estimate of the areawide change attributable to mining. If conditions of the proposed action are implemented, the estimated loss of wetlands will be mitigated.

T-14 - Dr. Lincer's comment regarding wildlife and wildlife habitat inventories

In this EIS, special status categories of fish and wildlife species in the study area are cited, including designations of the Florida Committee on Rare and Endangered Plants and Animals (FCREPA). Since these species are included among the area's important species, the proposed action stipulates that their management on mining areas be addressed in site-specific EIS's. Refer to responses T-1 and T-2.

T-15 - Dr. Lincer's comments regarding monitoring and dam inspection

See response to comment T-3. The agency agrees with this comment.

T-16 - Dr. Lincer's comment on economic burden on community services

There is no evidence of "economic burdens which phosphate mining places on community services and infra-structure." Quite the contrary, evidence shows clear economic value and support of the infra-structure.

T-17 - Dr. Lincer's comment on limitation on exports.

A National policy restricting export of phosphate would have to be implemented before such restrictions could be imposed. (See response to Comment T-4).

T-18 - Mr. Miller's comment on defining categories of wetlands

The three categories of wetlands will be mapped for each new source mine, since categories will be determined on a site-specific basis. The scale will be larger than LUDA maps.

T-19 - Mr. Miller's comment on importance of wetlands, or surface water, on climate.

If there is an effect on climate, it would be roughly proportional to surface area. If anything, area of surface water is greater after mining than before.

T-20 - Mr. Miller's comments on water conservation

To answer the questions raised, the Proposed action will result in less total area within dikes (water storage plus slime ponds), a reduced surface water discharge beyond normal surface runoff quantities, and a reduced pumping rate from the Floridan Aquifer, compared to operations at existing mines. The statements regarding retention of 10-year and 20-year storm events apply to chemical plants, and not mines.

T-21 - Mr. Miller's comments regarding citation of the Fish & Wildlife Study

Failure to cite the Fish and Wildlife STudy in the DEIS was an oversight. It is cited in the FEIS.

T-22 - Ms. Ann McCrainie's comments regarding destruction of tributaries, which reduces flow below 5 cfs

Mining and reclamation plans will be accomplished in site-specific studies for new sources prior to mining, and will establish and map areas for which Section 404 jurisdiction exists. This will not allow destruction of tributaries prior to determination of jurisdiction, as has happened on some existing source mines.

T-23 - Ms. McCrainie's comment on land use map showing areas to be mined

This was the most complete information we were able to obtain on industry's plans, holdings, leases, and options. If anyone has additional information, we would appreciate receiving this. These maps do not prohibit industry from future mining outside the areas shown.

T-24 - Ms. McCrainie's comment regarding Hillsborough County's requirements

The Clean Water Act does not allow EPA to be less stringent than local or state requirements.

T-25 - Mr. Archie Carr III's comment on need for more detail on how impact on endangered species will be avoided

Additional detail on prevention of impact on endangered species will be developed in site-specific EIS's.

T-26 - Mr. Carr's comment on need for fluoride study

The agency agrees that additional study is needed on effects of fluoride on vegetation, wildlife, and human health. As long as control equipment is continually maintained, and emission limitations are met, the ambient and vegetative fluoride levels will be much lower than pre-1965 levels, and will not cause adverse effects on vegetation, cattle, or human health. Effect of air emissions on wildlife are admittedly unknown; however, since no adverse effects have been documented in the past, it is anticipated that effects with reduced emissions are minimal if they exist. A sampling program sponsored either by industry or regulatory agencies which would lead to a determination regarding effects on vegetation and wildlife would certainly be worthwhile, and is recommended in Volume I.

T-27 - Mr. Carr's comment on leaving wetlands as pedestals

As mentioned previously (response T-5, point #20), mining effects on off-site adjacent wetlands, and, in the case of the proposed action, on on-site preserved wetlands, are largely unknown since previous permitting processes have not required such an assessment. The potential effects of current mining and reclamation procedures are presented in this EIS. Modifications of current procedures will be necessary in order to comply with the proposed action. Site-specific studies will be required to consider protection of wetlands from mining in adjacent areas.

T-28 - Mr. Carr's comment on limiting marketing abroad because of energy conservation considerations

See response to comment T-4.

T-29 - Dr. David Rosen's comments regarding health effects of radiation

See text of Vol. I and II, and response to Comment W-301.

T-30 - Mr. Homer Greer's comment regarding effect of slime pond dam breaks

The Proposed Action, which provides for elimination of slime ponds at new source mines, will substantially reduce the potential for slime pond dam breaks. Increased regulation and State inspections since 1971 at existing mines has also obviously reduced the potential for dam breaks at existing mines.

T-31 - Mr. Homer Greer's comment regarding recent fluorosis in a cattle herd in Hillsborough County

This incident was apparently not reported to Hillsborough County or to the Florida DER.

T-32 - Mr. Homer Greer's comment regarding economic effects

Primary and secondary economic effects due to employment are delineated in the FEIS, Volumes I and II.

T-33 - Ms. Catherine Fernald's question regarding EPA addressing the hidden cost of phosphate mining, the health, the water, the drawdowns, the salt-water intrusion, the loss of potable water.

We believe these questions have been addressed in the Areawide EIS, and will be answered more specifically in each site-specific EIS.

T-34 - Ms. Catherine Fernald's comment regarding Becker being declared an existing source.

As an existing source, Becker does not have to comply with the Areawide EIS, nor develop a site-specific EIS.

T-35 - Ms. Linda Campbell's comment regarding a concern about the lack of a thorough discussion of the impacts of phosphate mining on fish and wildlife habitats.

Additional information on the effects of mining on fish and wildlife habitats is in working paper Volume XI (Volume VII-NTIS). Rationale for importance ranking the terrestrial/wetlands habitat types is included (Volume XI, Section 2/Volume VII-NTIS).

T-36 - Ms. Campbell's comment about slime ponds providing wildlife habitat and adding to landscape diversity

The decision that conventional aboveground slime-disposal areas should be eliminated was based on the judgement that potential and actual adverse effects on water quality and land occupancy outweighed their value as wildlife habitat. Several references to habitat value of slime ponds as well as naturally dewatered slime pond areas are included in working paper Volume XI (Volume VII-NTIS). A summary of these views is found in this EIS. Added to these views is the suggestion that properly managed slime ponds are probably the most feasible replacement for Category 2 wetlands. Unless, an abandoned slime pond is intensively managed, however, it will not continue to provide these benefits. The trend is to dewater abandoned slime ponds, and develop agricultural areas.

T-37 - Mr. Homer Hooks' comment about losing options if the Proposed Action prescribes placing clay below ground.

The wording of the Proposed Action does not preclude any options for alternatives to conventional above ground slime settling ponds.

T-38 - Mr. Hooks' comment regarding clay ponds offering high quality wetlands sites.

See response to comment T-36.

T-39 - Dr. Cornwell's comment about Appendix C of the Archbold Study

As mentioned in Response T-1 and T-2, the FWS report generated by the Archbold Biological Station and this EIS contain similar assessments on the effects of phosphate mining on important wildlife species and habitats, including the view that natural revegetation is preferable to reclamation as currently practiced (working paper Volume XI, Section 2/Volume VII-NTIS). The theme of the Edscorn paper appendixed to the FWS report - wildlife values may be negated by reclamation - is expressed several times throughout the effects assessment (working paper Volume XI, Section 2/Volume VII-NTIS) and summarized in this EIS. As indicated in the FWS report, following the call-out of the Edscorn paper (p. 1276), a detailed inventory of these lands and surveys of their wildlife populations are needed to evaluate their overall significance as fish and wildlife habitats. Regardless, unless modified, current mining methods and reclamation practices will not produce habitats like those on long-abandoned mined land. Also, it is expected the naturally restored habitats will not support a diversity of wildlife resources equivalent to forested wetlands.

T-40 - Dr. Cornwell's comment regarding lack of documented adverse impact on wildlife

The Archbold Biological Station concludes in the FWS report (P. 1273) that the overall effect of mining the majority of mineable lands now owned by phosphate companies will be a serious reduction in both diversity and abundance of the wildlife resources of the 7-county area - notwithstanding modification of current reclamation practices and priorities. In a letter to the EPA (referenced in working paper Volume XI, Section 2/Volume VII-NTIS), the FWS stated: 1) the Archbold study indicated that wildlife species diversity appears to be significantly less in the areas of past and current phosphate mining than in new areas that are expected to be mined, and 2) much of this greater diversity may be attributable to the existence of natural wetlands --- floodplains and aquifer recharge areas, not mine pit lakes and slime ponds.

In a letter to Archbold Biological Station (appendixed in the FWS report), the Bureau of Environmental Protection of the Florida Game and Fresh Water Fish Commission indicated that mining or disturbance to sensitive wetland areas results in permanent habitat losses and drastic population reductions for many wildlife species of the area.

These observations were made in the context of the present environment of the study area, which includes Polk County and long-abandoned mining area.

T-41 - Dr. Cornwell's comment on lack of documented wildlife impact in Polk County

Most species current declines in the study area, as well as in Florida and elsewhere, are attributed to habitat loss, which, in certain parts of the study area, is a result of past mining. Indications are that most land use changes in the immediate future in the inland study area will result from mining. To the extent possible, estimated changes attributable to mining are clearly presented in the EIS, and in no case is 100% change attributed to mining. Nevertheless, phosphate mining has been an important contributor to terrestrial habitat loss in the past, especially in Polk County, and will be the major contributor, except along the coast of the 7-county area, in the immediate future. A point of prime consideration, besides upland reclamation possibilities and practices, is the fact that approximately 30% of mined land unavoidably becomes closed waterbodies - not wetlands or uplands.

As pointed out in the effects assessment (working paper Volume XI, Section 2/Volume VII-NTIS), mining is expected to contribute to the decline of several species other than threatened and endangered ones; the species are indicated therein.

T-42 - Dr. Cornwell's comments on wetlands restoration

The conclusion of the DEIS that true wetlands restoration on mined land is not feasible within a reasonable length of time stands. Both the biological and hydrological distinctions between Florida wetlands and wet lands are given in this EIS (p. 1.21, 3.4). Additional characteristics of the study area's wetlands, including terrestrial vertebrate associations and important plants, are found in Section 5 of working paper Volume VI (Volume VI-NTIS).

The species listed as potentially affected by mining or development of facilities in U.S. waters or wetlands meet the importance criteria set forth in the guidelines under which the areawide impact assessment was conducted. They are listed as water inhabitants or wetlands inhabitants, but incorrectly were lumped as wetlands inhabitants in the sentence quoted. This has been corrected and "shellfish" removed since the lists obviously include none. However, the implication that marine animals and those out in the "open areas" could not be affected by mining inland waters or wetlands is misleading although potential impact is minimal. Several references to disruption of flow regime, increased sedimentation, and turbidity among other disturbances from mining, are found in working paper Volume V, Section 2 (Aquatic Biota) (Volume V-NTIS) and working paper Volume XI (Volume Vii-NTIS).

T-43 - Dr. Cornwell's call for areawide guidance on assessing wetland characteristics

It is agreed that areawide guidelines for determining wetlands classification should be compiled. Riverine wetlands, as mentioned in the proposed action, are included in Category I. The preservation of highly productive, high quality wetland systems is presently the only assured method of maintaining their inventory. Increasing their inventory within the foreseeable future is unlikely; estimates of 5 to 20 years for development to equivalent conditions are unrealistic.

T-44 - Dr. Cornwell's comment regarding diversity of mined areas

In the letter referred to in Response T-39, the Bureau of Environmental Protection of the Florida Game and Fresh Water Fish Commission indicated that the loss of regional wetlands is not compensated by the creation of extensive lake systems. At a public meeting held in St. Petersburg, Florida during this EIS study for discussion of wetlands, the Florida Game and Fresh Water Fish Commission, Lakeland, Florida, indicated that mining pit lakes are indeed unhealthy and their estimated term as a viable life-support system is a mere five years. The Commission further indicated that Polk County needs no more aquatic habitat of the kind produced by mining, partly, because the lake edges are not acceptable life-support habitats.

T-45 - Dr. Cornwell's comments regarding restoring wetlands

Designing a functional drainage pattern for wetlands systems seems to be problematic, but as pointed out in working paper Volume XI (Volume VII-NTIS), physically unsuitable substrate apparently poses the most difficult of several problems in establishing particular wetlands vegetation. These problems were identified by the U.S. Army Corps of Engineers, which is experimenting with wetlands restoration all over the county. Other problems in restoration are found in the above citation.

T-46 - Dr. Cornwell's comment on uplands restoration

It is agreed that little experimentation on restoration of native upland communities has occurred. However, similar restoration problems exist, especially substrate structure (working paper Volume XI, Section 2/Volume VII-NTIS). Although we hesitate to agree with a Phosphate Council spokesman that "it's much easier to restore wetlands than virtually any of the other natural systems that are present on the land to be mined" (Dr. Cornwell's statement at Bartow, Florida Public Hearing - p. 53), we do agree with the implication that native upland communities cannot be readily restored on mined land. Additional information on uplands habitats and mining is contained in the above cited working paper.

T-47 - Dr. Cornwell's comment on experimentation on wetlands restoration

Although which 20 or 30 percent of habitat types to allow natural reversion of is not made clear, we repeat that reversion to any natural system now present on land to be mined is precluded by irreversible alterations in topography and soil structure during mining. Communities that will develop naturally on the mined land will be conversions rather than reversions. In relation to wetland types, natural conversion of mined land to wetlands has not been been documented. Naturally developing slime pond areas are "marshy" but not wetlands and, unless artificially maintained, will in 20 to 30 years, as demonstrated at Teneroc Wildlife Sanctuary, convert to dry sites.

We agree that further research in restoration of suitable habitat is needed and local testing necessary. As stated in this EIS (p. 1.27): although diversity will decline primarily because hardwood swamps and mixed forests (sandhills, sand pine scrub habitats) can neither be reclaimed nor naturally restored on mined land, establishment of similar habitat is possible and necessary to maintain much of the area's important biota.

T-48 - Dr. Cornwell's comment on impact on endangered species

Refer to Response T-41. A list of threatened and endangered species likely to be affected by mining is included in this EIS.

Additional information on these species, including their reported presence on proposed mining areas, is in working paper Volume XI (Volume VII-NTIS).

The reference to naturally-scored land is unclear. Our evaluation of certain existing habitat types in the mining areas as modified but still productive and essential for many wildlife species, including threatened and endangered ones, is supported by the Bureau of Environmental Protection of the Florida Game and Fresh Water Fish Commission in the letter appendixed to the FWS report (see Response to Comment 40). Our overall assessment of impact to wildlife, along with that of the FGFWFC, is based on current mining methods and reclamation practices not those of the past. Additionally, we considered the projected areawide extent of habitat decline attributable to current and proposed mining. We disagree that the managed systems occupying currently reclaimed land will support wildlife diversity even nearly equivalent to that existing, and, as pointed out previously (Response to Comment 40), naturally restored lands of the past are not currently supporting equivalent diversity nor are they expected to in the foreseeable future.

T-49 - Mr. W. M. Leaders' comments on radiation

In response to Mr. Leaders' only substantive comment concerning the absence of radiation survey data for unmined phosphate land in the Central Florida counties, refer to response W-301.

With regard to his other comments, two are patently incorrect and/or misleading. For example, while Mr. Leaders' statements concerning potassium-40 are at face value correct, his manner of presentation was misleading. Potassium is radioactive by virtue of its constituent isotope, potassium-40, which makes up 0.01% of its natural elemental occurrence. This element, in natural homeostasis within the body, has a total activity of about 0.1 Ci. His contention that an individual's greatest exposure to "extra" radiation is due to proximity with other individuals is, of course, ludicrous. Exposure from potassium-40 is part of our natural background exposure, with almost all of the dose received internally, the exposed organ being primarily muscle (not the circulatory system).

His statement to the effect that unmined phosphate-related land may have as high a background as reclaimed land is misleading. The exposure related to reclaimed land is not "natural" background radiation exposure by definition, as is the background associated with nonmined land. The efforts of man have modified the environment with the effect of increasing terrestrial radiation levels.

T-50 - Charlotte County Commissioner Robert Shedd's comments regarding monitoring

See response to Comment T-3.

T-51 - Councilman C. R. Johnson, City of Punta Gorda, comments regarding City's efforts, and need for monitoring program

The City of Punta Gorda is certainly to be commended for its program to remove the treated discharge from the Peace River and go to landspreading. If all sources in the Peach Basin were to take a similar attitude and approach, the Peach River and Charlotte Harbor would undoubtedly again become pristine waterways and outstanding fisheries. (See response T-3 for response to comments regarding need for monitoring.)

T-52 - Mr. Joseph R. Roach's comment that proposed action is only applicable to new plants, and that the study states there will not be any new plants.

This statement is true for chemical plants only. New mines and beneficiation plants are projected. The 1976 rules mentioned are for mining discharges.

T-53 - Mr. Roach's comment regarding State effluent limitations on mining being aggressively litigated.

This is true, but as of the date of this writing, the Florida effluent limitations are still applicable.

T-54 - Mr. Roach's comment regarding EPA final rule for effluent limitations for mining.

The statement is correct. However, the EPA standards are National Standards, and had to consider conditions at phosphate mining operations both inside and outside the State of Florida. As is allowed by Section 511 of the Clean Water Act, the State of Florida can adopt more stringent limitations. In the case of phosphate mining, Florida has exercised this option. Section 301(b)(1)(C) requires EPA to include the more stringent State limitations as enforceable NPDES Permit conditions. Since the EPA effluent limitations have a national basis, and are not necessarily protective of watersheds as sensitive as the Tampa Bay and Peace Basins, the State is encouraged in its endeavors to adopt more stringent limitations for phosphate mining and chemical processing operations.

T-55 - Mr. Roach's statement that no improvements may be made because BAT limitations are no more stringent than BPT

As stated in an earlier response and in the FEIS, protection of water quality in the Peace and Tampa Bay Basins requires more stringent effluent limitations than the BPT and BAT standards. Existing mines and chemical plants in the Tampa Bay and Peace Basins have consistently discharged much lower concentrations than allowed by EPA's BPT and BAT. Existing Source NPDES Permits need to be revised to reflect quality of existing discharges and the need for water quality protection in the Peace and Tampa Bay Basins. While the FEIS has no legal implications on existing sources, it is hereby recommended that EPA, Region IV, take appropriate action toward revising and reissuing permits to the existing chemical plants based on water quality protection of the receiving waters. This course of action will necessitate an intensive water sampling survey during the wet months of 1979 by EPA and/or DER. The survey, along with data from routine sampling by DER and USGS, will document pollutant loadings from all existing sources, and effects on water quality in the two basins. Results can be used for revision of all existing permits.

T-56 - Mr. Roach's statement regarding conflict between the Southwest Florida 208 and statements in the Draft EIS regarding sources of nutrient concentrations in the Peace River.

Text has been revised (p. 1.2B of Volume II, FEIS). Mr. Roach is correct in asserting that phosphate chemical plants are the leading source of plant nutrient materials in the two basins. However, there are only two chemical plants in the Peace Basin, where there are twelve mines. In the Tampa Bay Basin, there are twelve chemical plants and seven mines.

T-57 - Mr. S. R. Stedman's comment regarding economics of extracting fluoride

The requirement to lower concentration of fluoride in gyp ponds will result in the need to extract fluoride, whether or not it is marketed.

T-58 - Mr. Samuel Wapner's comments on phosphate reserves

Latest Bureau of Mines Projections received by EPA as of September, 1978, are utilized in the FEIS.

T-59 - Mr. Maywood Chesson's comments regarding flexibility of EIS

We believe that wording in the FEIS is sufficiently flexible to allow for changing technology.

T-60 - Mr. Jim Kelley's comments regarding monitoring

See response to comment T-3 . We certainly agree that unannounced inspections are needed.

T-61 - Mr. David Wilson's comments regarding reclamation

See text of Volume 1 for reclamation requirements.

T-62 - Mr. Robert M. McQueen's comment regarding "insignificant" hydrologia functions of Category 3 wetlands.

Text has been revised. See page 2.3 of Volume I.

T-63 - Mr. McQueen's comment about existing source mines.

See response to comment T-55.

T-64 - Mr. McQueen's question as to basis of reduced runoff

Reduced runoff is based on low flow periods. Peak flows will also reduce somewhat, but annual flow remain approximately the same.

T-65 - Mr. McQueen's comments about revision of working papers.

The working papers have been revised and reissued.

T-66 - Mr. McQueen's comments about retention of runoff in Polk County

While retention will decrease low flows, it will not have a significant effect on annual average flows. Precise predictions of effects on flows will only be possible after site-specific studies are completed.

T-67 - Mr. Jonathon Miller's comments regarding wetlands, maintenance of minimum flow, and storage

Text of FEIS and Working Papers have been revised to respond to these comments. The FEIS does not require maintenance of a minimum flow from mining operations, but this could well become part of the SWFWMD Permit provisions, as established through individual DRI's and site-specific EIS's. Storage to be provided to meet water re-use requirements will have to be determined in site-specific studies.

SECTION 3

WRITTEN COMMENTS

SECTION 3

CONTENTS

Letter	Page
Florida Phosphate Council	3-1
CF Industries, Inc.	3-95
Beker Phosphates Corp.	3-98
Florida Chapter of the Wildlife Society	3-105
The Izaak Walton League	3-107
Citizens Against River Pollution	3-111
Florida Audubon Society	3-113
State of Florida, Dept. of Administration	3-118
State of Florida, Dept of Environmental Regulation	3-159
Tampa Bay Regional Planning Council	3-198
County of Sarasota	3-202
Mary L. Jelks, M.D.	3-218
General Development Utilities, Inc.	3-219
Mrs. Martha Kjeer	3-225
U.S. Dept. of the Interior	3-227
Mrs. E. K. Ervin	3-252
James R. E. Smith	3-257
Manatee County Planning & Development Dept.	3-258
Manatee County Health Department	3-260
C. F. Industries	3-264
Gardinier, Inc.	3-271
Swift Agricultural Chemicals	3-273
Save Our Bays Association, Inc.	3-276
The Fertilizer Institute	3-278
Mississippi Chemical Corp.	3-281

Letter	Page
Mrs. Jean M. Flavin	3-288
Carl T. Zimmerman	3-289
U.S. Dept. of Health, Education, and Welfare, CDC	3-290
U.S. Dept. of the Air Force	3-291
David O. Munson	3-292
C. F. Industries	3-296
Dorr-Oliver, Inc.	3-298
Hillsborough Co. Planning Commission	3-300
Robert N. McQueen	3-307
AMAX Chemical Corp.	3-315
EPA, Air Strategy Development Section	3-319
U.S. Dept of Health, Education, and Welfare, Region IV	3-320
U.S. Dept. of the Army, Jacksonville District, Corps of Engineers	3-321
U. S. Dept. of Agriculture, SCS	3-323
EPA, Effluent Guidelines Division	3-324

[illegible] council

phosphate
feeds you

Suite 24, Executive Plaza
4406 S. Florida Avenue • P.O. Box 5530
Lakeland, Florida 33803
Telephone 813/646-8583

Homer Hooks
President

June 20, 1978

Mr. John E. Hagan, III
Chief, EIS Branch
Environmental Protection Agency
Region IV
345 Courtland St., N.E.
Atlanta, GA 30308

Dear Mr. Hagan:

Subject: Comments on the Draft Area-wide Environmental Impact Statement for the Central Florida Phosphate Industry, March 1978

We submit as Attachment A herewith the comments of the Florida Phosphate Council, Inc., on the above document. The comments are intended to provide you with information generated by individuals directly familiar with the seven-county area and the phosphate industry.

The submission is a page-by-page commentary extending over a broad range of topics, identifying sections in which errors of fact occur and pointing to shortcomings in the treatment of ecological considerations, such as the failure of the Draft EIS to communicate the extent to which the study area is presently man-dominated and failure to recognize that phosphate mining represents the single greatest opportunity for increasing the inventory of wildland communities, either wetland or upland, within the study area.

The conclusion of the Draft EIS that phosphate mining should continue and expand in the study area is appropriate. Maintaining environmental awareness on the part of the industry will prevent potential adverse impacts. The Proposed Action of the Draft EIS includes many useful concepts that the Florida phosphate industry is already implementing.

Several statements concerning the Proposed Action should be reiterated. Mining should not be precluded on any categorical basis, for example, as in "Category One" wetlands. Although the Area-wide EIS may discuss policies or general findings, restrictions on site-specific activities should

Chairman of the Board: A. G. Garcia, Agrico Chemical Co.

Agrico Chemical Company • Borden Inc. — Chemical Division/Smith-Douglass • Brewster Phosphates (American Cyanamid/Kerr-McGee) • Conserv. Department of Philipp Brothers Division of Englehard Minerals & Chemicals Corp. • Electro-Phos Corporation • Farmland Industries, Inc. • Freeport Chemical Company • Gardinier, Inc. • W. R. Grace & Company, Agricultural Chemicals • International Minerals & Chemical Corporation • Mississippi Chemical Corporation • Mobil Chemical Company • Occidental Chemical Company • Royster Company • Stauffer Chemical Company • Swift Agricultural Chemicals Corporation • T/A Minerals Corporation • USS Agri-Chemicals

not be proposed until EPA, the Corps of Engineers, the Fish and Wildlife Service and other agencies have been consulted regarding detailed plans for development and restoration submitted by the applicant. Similarly, site-specific factors are of overriding concern in the matter of waste clay disposal. Decisions regarding implementation of alternative methods must be based on such considerations as quantity and types of clay in the ore body, value of a balanced reclamation plan, and utilization of clay disposal areas as managed wildlife habitat.

Related discussion regarding implementation of the EIS is enclosed as Attachment B. This attachment includes a letter dated April 18, 1978 from Alan W. Eckert, Acting Associate General Counsel, Water Quality Division EPA, and a copy of the response of the Florida Phosphate Council, Inc., to this letter dated June 19, 1978.

For your records, we have included as Attachment C copies of previous submittals by the Florida Phosphate Council, Inc., during the development of the EIS.

We appreciate the opportunity to present these comments and hope they will be helpful to you in developing the Final EIS. We will be glad to discuss any of our comments in more detail with you if you desire.

Sincerely yours,

Homer Hooks

Homer Hooks

HH:jb

Enclosures

cc: Steering Committee
Advisory Committee

ATTACHMENT A

Comments of the Florida Phosphate Council, Inc.

Contents:

Comments labelled pages 1 through 47

ii "Land surface will be altered by surface mining and reclamation; soils and vegetation removed from the mining and associated areas; wildlife habitat and populations reduced."

As in all other cases where surface mining and reclamation effects are discussed, the time frame considered for comparison with the premining conditions is the immediate, postmining time frame. No consideration is given to the type system that will appear on mined and reclaimed areas many years after mining. W-1

ii "Livestock forage will be reduced during mining operations, and productivity of the mining area will be reduced even after reclamation."

No data were presented to indicate that productivity of the mining area would be reduced after reclamation. Field observation shows that productivity is increased with or without reclamation, probably due to the soil disturbance with provision of additional nutrients and resources to the newly created surface soils. W-2

ii "Recreational resources will be reduced, archeological values may be destroyed, and aesthetic aspects will change."

Mined and reclaimed areas should be as suitable for small game based recreation as the premining condition. The created land and lakes habitat is productive for waterfowl and as a pond or small lake fishery. These uses represent an addition to the recreational resources of the area. The archeological values should not be destroyed because each site specific DRI/EIS requires an archeological survey. Significant sites require excavation prior to mining. W-3

1.1 "Polk County is the site of most of the current phosphate industry activity, but several chemical plants and one mine are in operation in Hillsborough and Manatee counties."

Several chemical plants and two mines are in operation in Hillsborough County, and one chemical plant is in operation in Manatee County.

1.2 "The chemical plants are expected to remain in their current locations."

The statement is unclear as written, but suggests that no new chemical plant construction will be undertaken which is an unwarranted conclusion. W-4

Farmland has announced new plant

1.3 "Figure 1.1: Phosphate Rock Supply-Demand Projections."

A linear upward sloping demand curve for phosphate is unrealistic. It ignores the influence of price on demand and no explanation as to why phosphate demand will rise unabated in the future is provided. At some point decreasing returns set in with ever increasing applications of phosphate based fertilizers. W-5

The forecasted levels of Florida phosphate output may not decline after 1985, as the industry applies improved recovery techniques. Additionally, the author's assumption of reduced Florida phosphate production is contradicted on pages 1.1-1.2 of the draft.

1.3 "The phosphate industry currently owns either the land or mineral rights on enough phosphate deposits to continue the present rate of production beyond the year 2000."

There are several phosphate rock supply-demand projections available that indicate larger resources than the DEIS. Mr. J. L. Weaver, a recognized authority on phosphate geology and mining, stated in a paper to the American Chemical Society on April 6, 1976: W-6

> "The three mining areas of the Southeastern United States: Central Florida - North and South; North Florida; and North Carolina; all have adequate reserves to support expanded production for more than 50 years."

1.3 "Table 1.1: Estimated Phosphate Rock Reserves and Resources in 7 - County Study Area."

The estimate of phosphate rock reserves in the 7 - county study area is low. The calculation of "Subeconomic resources" is technological and price determined. With no analysis of future phosphate prices, little credence can be given to these calculations.

Regional and world reserves of minerals are not static and accuracy demands frequent updating. Worldwide known reserves of phosphate increased 45-fold in the twenty year period preceding 1970 (Council on International Economic Policy, 1974) as the demand for chemical fertilizers increased and incentive was lent to exploration. The expense of prospecting and land acquisition will generally not be borne until justified by market conditions. The status of known reserves is intimately linked to that fact. W-7

1.4 "Mining has not appeared to have played a significant role in the growth of the region since 1960."

This conclusion is not supported by the facts. Phosphate mining continues to be a propulsive force in Polk County. Since 1960, its payrolls and expenditures have increased rapidly. The industry is capital intensive and the direct employment effects have been modest. However, the industry is a vital component of the area's export base. Secondary effects from the industry are substantial. As mining activities move south into Hardee and DeSoto, economic growth in these counties will be stimulated. Employment, income, population growth, and tax revenues will all increase. W-8

1.5 "Table 1.3: Phosphate Industry Ad Valorem Taxes Paid, 1972-76."

Ad valorem tax adjustment on mineral value currently being promoted in Hardee and Hillsborough counties would have a significant effect on the figures shown. W-9

1.8 "The tailings or waste from this fraction is used in dam construction or land reclamation. The fine fraction is processed through a flotation section to recover a fine concentrate. The waste, a clay slime, is impounded in areas that have been mined."

Fine phosphatic clays are separated from the combined feeds before the sizing and flotation process. The sand tailings from both coarse and fine flotation are used in dam construction or land reclamation. W-10

1.8 "Even then, the uses to which the land may be put are restricted to light-load applications such as pasture or other agricultural activities."

The land use limitations are established only by economics. Construction on such land can be accomplished using techniques commonly applied for other cases in which high clay soils present difficult foundation conditions.

1.9 "Wastewater is treated initially with lime to raise the pH and is subsequently treated as necessary to meet effluent standards."

Only contaminated water from chemical processing plants that is discharged to surface waters must be treated with lime prior to discharge. W-11

1.12 "Figure 1.3: Vegetative and Ambient Fluorides in Polk County."

The figure fails to show ambient fluoride levels or data on emission or vegetative fluoride more recent than 1974. The average data for vegetative fluoride are: 1975, 47 ppm; 1976, 48 ppm; 1977, 52 ppm. W-12

1.16 "Most soils of the study area are young and underdeveloped, nearly level or gently sloping, acidic, very sandy with high permeability, and generally low in clay, organic matter, and plant nutrients."

This factual statement underscores some of the most fundamental, long-term edaphic changes associated with mining which results in increased biological productivity and regional species diversity. These are: W-13

- increased clays in the "A" and "B" horizons, reducing permeability with a net gain for forest species adapted to more mesic conditions.
- increased phosphate concentrations in the root zone of the invading plant life, providing for greater fertility and increased productivity.
- increased variability on topography and slope, providing the potential for more niches and better sanctuary from human disturbance.
- increased aquatic habitat niches and increased wetland inventory resulting from lake edges and slime ponds.
- rapid accumulation of humus in the "A" soil horizon because of the increased biological productivity.
- deposition of sand tailings provide a potential for establishing scrub, sandhill, and xeric hammock communities.

1.20 "The distinctive Florida environment - sandy soils, low relief and elevation, poor drainage, and a mild climate with relatively even temperatures, frequent lightning and rainfall characterized by great seasonal differences - is a major influence in shaping a spectrum of terrestrial biota that is unique within the United States."

The above statement relates to peninsular Florida and is not specific to the areawide study unit. All biological assemblages are shaped by their environment and also help shape their environment. The statement is true of all regional ecosystems and provides the basic rationale for man's management of his environment. W-14

1.20 "Among the particular biota of central Florida are many temperate-zone species at their southern limits, some hardy tropical species at their northern limits, and numerous species that are endemic to the state."

The only vertebrate species endemic to the study area are: sand skink, short-tailed snake, and Florida mouse. These hardly qualify as "numerous." Nowhere are the endemic biota specifically identified, a major oversight in a DEIS of this scope. The three endemic species are listed in the working paper concerning land (TI 1977 e), Section 5 (p. 5.95, par. 1), as well as the three subspecies (p. 5.95, par. 2), but this important information has not been transferred to the DEIS.

This endemic species point is made several times throughout, but is not well explained or documented. Certainly, this would apply more to floral and invertebrate species than to vertebrate fauna. Florida does have several additional endemic subspecies vertebrates. The Section 5 working paper (on p. 5.95) notes that, "the Florida mouse is ... the only mammal species restricted to Florida." The weighted use of endemics in the text is disproportionate and misleading. W-15

The DEIS rightly emphasizes the importance of flagging endemic species so they can benefit properly from appropriate management. Unfortunately, the endemic vertebrate species are not so identifiable in Table 1.11.

1.20 "The 7-County study area is predominantly agricultural land and rangeland (more than 450,000 hectares, or 1,000,000 acres of each); wetlands comprise approximately 178,000 hectares (440,000 acres), and forests comprise about 70,000 hectares (175,000 acres)."

This brief breakdown in land use, at the outset of the DEIS, fails to communicate the extent to which the 7 counties are now man-dominated. Most of the remaining natural systems, regardless of quality, occur in the 779,000 acres (22% of total region) of forests, wetlands and water areas. Of course, this intensive human use of land makes the remaining extent of natural systems all the more important. Reversion to nature and restoration of natural habitat from mined lands appears to be the only economically viable method for increasing the quantity and quality of wildland habitats in the study area. W-16

Because so much emphasis is given in this section and others to the generalized, descriptive aspects of the natural ecosystems within the study area, the reviewer has considerable difficulty in grasping their actual extent or location relative to past, present, and proposed mining. Likewise, a useful quantitative and qualitative assessment of the described natural habitats is generally lacking.

1.20 "Approximately 75 percent of the study area's agricultural land is cropland and improved pasture;"

In effect, this paragraph tells us that the 1,128,563 acres (31.5% of the study area) of agricultural land are "intensely managed," have "comparatively few plant species," and "have less wildlife value." A major part of the lands proposed for mining will be in this cover type. Knowledge of the extent is vital for assessing impact, since the postmining condition is certain to increase natural system values over the present man-dominated agricultural system. W- 17

1.20 "Most of the rangeland of the study area comprises modified pine flatwoods."

The 1,116,238 acres (31.3%) of "modified pine flatwoods" rangeland, as intensively managed in the study area, typically are low in natural system plant and wildlife values. If a preponderance of the lands to be mined are of this type, then the net effect of mining will be an increase in natural system diversity and productivity over the existing land use. Knowledge of the extent of the present and proposed mining in this land type is crucial to an accurate projection of mining impact. W-18

1.20 "Of somewhat greater wildlife value and of considerable biogeographical significance is the comparatively small amount of rangeland that is natural dry prairie, or palmetto prairie;"

The "natural dry prairie" or "palmetto prairie" presentation as a unique habitat type is ecologically debatable, as is its being an endemic Florida habitat. This concept is apparently derived from Kuchler's (1964) map, which is a macroscopic mapping of the "major potential natural vegetation types of the coterminous United States." Kuchler's map shows this "palmetto prairie" type occurring in the southern portion of the region as a large block in Charlotte and DeSoto counties and two smaller areas in Sarasota and Manatee counties, virtually none of which is scheduled for mining. Much of this vegetation type may actually be typical cut-over pine flatwoods. If this cover type is endemic, unique and so ecologically important, it ought to be quantified and mapped. W-19

1.21 "By far the greatest amount of remaining forest in the study area is typical pine flatwoods."

Knowledge of the extent of the 172,101 acres of forest that is typical pine flatwoods is a significant factor in the impact analysis. Similarly, the "small amount of deciduous forest" is not quantified. Throughout the DEIS, the consistent assessment of a net loss in diversity is based heavily on an unsubstantiated mining impact on the deciduous forests, sandhills, sand pine scrub, and dry prairies. The concern centers on over-all areawide biological diversity. However, the failure of the DEIS to address the matter through standard resource inventory and cover mapping techniques is a major shortcoming. W-20

Postmining restoration potentially can reestablish all the forested communities destroyed through mining and so influence succession, species distribution, and niche formation in order that the mined-communities diversity will approximate that of an equivalent natural community within about 50 years.

1.21 "The study area's wetlands include bayheads (dominated by broad-leaved evergreen species), hardwood swamps (dominated by broad-leaved, deciduous species), cypress swamps, mangroves, wet prairies (emergent herbaceous species), freshwater marshes (emergent and floating herbaceous species), and saltwater marshes."

One must know at the outset the relative acreages of wetlands of each type. A certain portion is within present and projected mining areas. Some portion is the result of mining. A percentage is saltwater marsh that is subject to only a remotely possible impact from mining many miles inland. Part of the wetland acreage is degraded. A portion is ephemeral, as the wet prairies which often lack dominance by hydrophytic flora. The generalized valuation and the importance of many true wetlands is justifiable. However, many ephemerally wet areas lack the hydric soils or hydrophytic vegetation normally used to classify an area as wetland. Phosphate mining and restoration has a great potential for increasing the inventory of viable wetland habitats over the premining condition. W-21

1.22 "These wetland types - hardwood swamps, wet prairies, and freshwater marshes - are classified as highly endangered lands in Florida."

W-22 The value of an "endangered" label is weakened if the resource is not, indeed, endangered. The U. S. Fish and Wildlife Service inventoried Florida's wetlands in 1954 and arrived at a total wetland acreage of 17,778,100. A new inventory is currently underway. If Florida has lost one-half of its wetlands since 1954, the total would still be about nine million acres. This would not seem to warrent a "highly endangered" designation.

1.22 "On a broader scope, all of central and south Florida's wetlands are important since they comprise, along with those of southeastern Louisiana, the remaining wetlands of significant extent and value in the United States."

This statement is not true. The 1956 USDI inventory of "Wetlands of the U.S.," Circular 39, identified 74,439,300 wetland acres in the U.S., of which 17,185,300 were in Florida and 9,647,300 in Louisiana, or about 1/3 (one-third) of the U.S. total. The relative abundance of Florida wetlands, incidentally, points to the erroneous impression communicated by a "highly endangered" categorization. W-23

1.22 "Wetlands extent is expected to decline in the seven counties, as is the extent of all terrestrial habitat types."

This projection depends heavily on the percentage of the areas's wetlands in the lands to be mined, the rehabilitation methodology, and the success of wetland protection throughout the study area. Phosphate mining offers the single greatest potential for significantly increasing the wetland acreage. Slime ponds offer a dramatic potential for an extensive acreage of managed freshwater marshes in which water levels can be manipulated to maximize fish and wildlife values. Hundreds of millions of dollars have been spent by the U.S., Canada, and private organizations such as Ducks Unlimited to create and manage waterfowl production wetlands not unlike the potential marsh management units that could be established in reclaimed slime ponds. W-24

1.22 "Habitat types of greatest decline will be those of greatest importance to wildlife."

This prediction is obscure, if not simply unfounded, since the habitat types of greatest decline are not identified. However, the prediction does seem to relate to the projected areawide land use with continued increase of man-dominated acres. Land-use regulation will help check that trend. Phosphate mining and reclamation offers the best hope for locally maintaining and increasing the habitat types of greatest importance to wildlife. W-25

1.22 "More than 500 species and subspecies of vertebrates (excluding fishes) are represented or have been represented in the recent past in the 7-county area; they include some 28 amphibians, 68 reptiles, 384 birds, and 55 mammals."

This general statement lacks a realistic perspective of expected occurrence and, therefore, potential mining impact. Of the 384 birds, for example, 59 are "accidentals" (vagrants) that are unlikely to be affected at all by mining. A dozen of these accidentals are listed among the important birds of the study area (Table 1.11). An additional 59 birds are migratory, so that about one-third of the birds listed for the study area are exposed to the region only briefly or rarely. W-26

1.22 "Nearly half of the species are of special interest or concern..."

If almost 50 percent of the vertebrate species found in the seven-county area are of special interest or concern, it would appear that the criteria for including species of special interest or concern in the list are unrealistically broad. The fact that a relatively small percentage of the listed species are actually of significant interest in conducting mine planning is not emphasized. W-27

1.26 "Further development of the Florida phosphate industry will significantly affect the seven counties' existing uplands and wetlands biota, including many important floral and faunal species."

While the "significant affect" of mining is indisputable, the net ecological impact can be far more positive than visualized by the authors, dependent entirely on the reclamation, restoration, and reversion of mined land. The art of natural resource management is sophisticated and predicated on several centuries of experience. This is particularly true in terms of the management of renewable biological resources. Foresters, fish and wildlife biologists, and others consistently have been more limited by economics than knowledge. W-28

The implication that some species are "more important" than others clashes with such basic ecological principles as food chains, webs of life, community structure, dependence, and so on. The endangered species concept is predicated on the importance and interdependence of all species. Human priorities for the management of biological resources may be determined by abundance, scarcity, economic use, pest status, and other such interfaces with man, none of which relate to the relative ecological importance of a species functioning within its niche. The suggestion that some species are more important than others occurs frequently in the DEIS.

1.26 "Beyond the effects of devegetation or disturbance, as much as 30 percent of the terrestrial habitat in mined areas becomes aquatic habitat (lakes and ponds), permanently displacing the associated flora and fauna."

The percentage change in cover of a particular premining habitat depends entirely on the postmining restoration program. Wetland inventories can be increased following mining, as can sandhill or scrub habitats. The preponderance of existing terrestrial habitat in the area has been so severely and adversely impacted by man, that an effective and extensive natural system restoration program will increase significantly the extent, diversity, and standing crop of native flora and fauna. W-29

Even with no improvement by the industry in the planned restoration of natural ecosystems over that which occurred fortuitously in the past via abandonment, the mix of aquatic and terrestrial communities results in species diversity, biological productivity, and natural system values far exceeding those associated with timber, food, and fiber production, the now prevailing land-use. To most of Florida's ecologists and naturalists, the aquatic and wetland habitats created by mining, especially following few years of maturing and revegetating of the watershed, would be considered a net gain over improved pasture, citrus, or a pine plantation.

Flora and fauna are rarely "permanently displaced", other than through evolution and extinction. The fossils of tropical species have been found in the Arctic, while North Temperate fossils are common in Florida. During an Ice Age, temperate-requiring species retreat from the growing glaciers, while arctic species advance and invade with the glacier. Classical ecological literature is replete with successional case histories, old fields in the midwest being one of the best known. Similar to a natural geomorphic process, strip-mining returns land to a bare surface. Nature abhors bare surfaces and revegetates them as quickly and efficiently as possible, beginning the successional process yet again. With man's growing resource management knowledge and the practical economics associated with mining phosphates, the rate of natural revegetation and succession can be advanced substantially. Often, the basic edaphic changes brought on by mining can result in a more "complex," or "diverse" mature, postmining community. For example, a premining cut-over flatwoods (partially identified by the DEIS as "palmetto prairies") is destroyed by mining. The soil hardpan is gone, clays and available phosphates increase in the new soil, and with planned restoration, a mesic hammock can replace improved pasture or native range within 50 years. The Christina site near Lakeland is an excellent example.

"Permanent displacement" is an obvious concern held by the authors and most environmentalists. Few biological species display locational continuity through geologic time. Vegetation and animals, through successive generations of individuals, are surprisingly mobile. Landforms change in time, meteorological conditions change, pathways and habitats expand and contract, genetic material undergoes change, all these factors pointing to the great resilience of most plants and animals in response to change. Alterations brought about by strip mining are within the tolerance range of most of the regional biota, as well-documented by the biotic communities now occupying the older, previously-mined areas. The DEIS cannot identify either a species or assemblage of species "permanently displaced" by Florida phosphate mining in this century. Conversely, aquatic biota in the mining area have been significantly enriched as a direct result of mining, and many species of terrestrial wildlife have benefited from the sanctuary provided by mined lands reverting to nature without reclamation. Indeed, strip-mined lands under ecologically sound management have enormous potential for producing lakes, wetlands, forests, and their associated wildlife populations.

1.26 "Irreversible alterations in local topography and soil structure of remaining land preclude the reestablishment of certain existing plant communities, including associations within typical pine flatwoods, dry prairies, hammocks, sandhills, sand pine scrub, and forested and nonforested wetlands."

There is no technical reason, when given overburden, clay and clean sand as raw materials, why satisfactory soil structure for most existing plant communities could not be formed. There is evidence to indicate that the role of soil development in primary succession has been exaggerated, in any case (Drury and Nisbet, 1973), and the data of Olson (1958) suggest that the availability of water and nutrients may be more important limiting factors in the establishment of vegetation than soil structure. W-30

The authors erroneously feel that the "irreversible alterations" in geomorphology and soils will "preclude the reestablishment," in effect, of most of the former existing natural plant communities. Logically, this can only be true when the alterations cause changes beyond the tolerance of the biota. The degree of irreversibility can be adjusted via land shaping and variations in the sand-clay soil composition. Future restoration technology can provide the topographic and soil conditions required for each of the plant communities identified in the DEIS sentence. Most ecologists would prefer increasing the freshwater marsh and aquatic system inventory rather than committing reclamation resources to reestablishment of pine flatwoods and palmetto rangeland which are so regionally abundant.

1.27 "Although diversity declines primarily because hardwood swamps and mixed forest can be neither reclaimed nor naturally restored on mined land, establishment of habitat similar to existing types is possible and necessary if much of the area's important biota is to be maintained."

On any given proposed site in the area, 50 years after mining, the postmining diversity conceivably could be significantly higher than before mining. "Diversity" is a much misused and misunderstood measure of environmental quality, as expressed, for example, by Hurlbert (1971). Species diversity is an evolutionary product of such variables as time, environmental stability, environmental suitability, community structure, niche formation, dominance, competition, succession, displacement, replacement, and other factors. W-31

Mature "climax" communities may have a lower diversity than one of the seral stages enroute (Whittaker, 1953). Stability is not necessarily linked to diversity, and various perturbations can increase diversity. In terms of a large area (i.e. ± 20,000 acres), a mosaic of different plant communities, each in various successional stages, with contiguity between younger and older elements will result in a near maximum diversity. These conditions can be incorporated readily in a site-specific restoration plan, including a component that is not directly disturbed by mining. The idea that on an area-wide basis, biological diversity is assuredly reduced by mining is unlikely. Long experience with the older mined lands suggests just the opposite (Edscorn, 1977).

Several examples of natural succession of mined lands into mixed forest can be seen on older mined lands, such as at the Christina site and the Tilghman Mine southwest of Fort Meade. The mesic hammock now occupying the Christina slime pond would not be vegetationally distinguished by most experienced naturalists as other than a natural hammock. The hardwood swamp "forested wetland" type could occur on small acreages of previously mined lands, but it has not been observed with certainty. A small cypress head community that appears to be post-mining occurs within the dike of a Teneroc Mine area now undergoing reclamation. Successional species found on slime areas mined in the 1950's indicate that hardwood swamp communities can be restored by providing the necessary annual hydroperiod on heavy soils and stocking with cypress, gum, bays, and similar species. Foresters in Florida and the South have demonstrated the suitability of using nursery trees for reforesting favorable wetland sites.

1.29 "Contaminating the water table aquifer locally are nutrients from fertilized agricultural land, sewer leakages, and seepage from industrial lagoons, septic systems, and landfills." W-32

Data are not presented in support of the statement.

1.32 "Hydrogeologic conditions favor entrance of contaminants to at least the water table and upper Floridan Aquifers. However, contamination is generally poorly documented due at least in part to monitoring deficiencies."

Evidence is not presented to support the statement that hydrogeologic conditions favor entrance of contaminants to the aquifers. Radiological data show the quality of water in the water-table aquifer to be within EPA drinking water limits and no significant differences exist between mined and unmined areas. W-33

1.42 "These lakes generally have steeply graded sides and narrow littoral zones of comparatively low diversity."

There is no data presented that shows a lower species diversity for the mining lakes as contrasted to nearby natural lakes. It appears that a comparison is being made between a relatively young aquatic system and a premining community which may have had a relatively unlimited period of time in which to achieve its degree of diversity. The deeper water bodies have the ability to maintain water throughout the year as well as during periods of significant drought. The ecological life of the mining pits is much longer than that of shallow, natural lakes because of the depth available for detritus and nutrient sink storage. The lake systems occupying reclaimed areas, as well as those of unreclaimed areas, are probably of greater utility to man for recreational and sport purposes than were the extremely shallow, periodically dry systems which they replaced. The ability of the mined areas to support a wider range of recreational and sports species, the ability of mined areas/reclaimed areas to maintain higher populations of recreational species after mining and during droughts than in the premined or natural condition will probably be greater. W-34

Further, maintaining portions of the mined areas in an unreclaimed and therefore, relatively inaccessible state, should preclude disturbances by man in the future and allow a refuge area for certain species.

1.44 "Phosphate mining within the study area might potentially affect only three of the 13 threatened and endangered species."

This comment is much more in perspective than the listing of approximately 50 percent of the vertebrate species of the area which gives the superficial appearance of a high degree of concern for most of the vertebrate species in the area. That mining might potentially affect only three protected aquatic species is significant when considering a region of such extensive aquatic habitat. Even more important, and not adequately addressed, is the extent and nature of potential impacts.

Although the narrative does recognize that the alligator "is not seriously threatened in Florida," it does not quote from the terrestrial biota working paper (TI, 1977e, p. 5.55) that it is "abundant in optimum habitat within the study area" which includes much of the mining-created aquatic habitat. An impact assessment later in the DEIS (p. 2.53) states that "Land preparation and mining...will cause some loss of habitat and displace the American alligator, but likely will have no adverse impact on the area's alligator population." It does not mention, however, that this species' population probably will expand as a result of a net increase in aquatic habitat due to mining. Further, much of the mining-created wetlands can have a higher sanctuary value than the generally more accessible natural system wetlands. Hunting was the major factor in the alligator's decline. W-35

Mining activity is not likely to directly disturb any of the recognized manatee habitat within the study area, which includes portions of the downstream reaches of the Myakka, Little Manatee and Peace Rivers, as well as coastal areas. Some 500 of these animals have been estimated to occur along Florida's Gulf Coast. The impact assessment (DEIS p. 2.53) states that mining alterations are expected to have "only very minor effects on the...manatee through a potentially altered distribution of food plants" (via possible slime spills, not mining per se).

The narrative indicates that "the Suwannee cooter...is apparently limited to the Alafia River and particularly in the Lithia Springs area." The DEIS provides no specific study area figure with a composite of the natural system habitat features and the proposed mining areas. Therefore, it is difficult or impossible to correlate species-specific habitat ranges with proposed mining activity. This type of graphic is normally considered to be required and essential base-line information in a document of this type. The appropriate working paper (TI, 1977e, p. 5.56) does note that this species "apparently is quite rare in the study area" and the impact section of the DEIS (p. 2.53) indicates the same "very minor effects" from mining as it does for the manatee.

When assessing the available information given for threatened and endangered aquatic species in the study area, the evidence indicates that mining activity will have a negligible impact on the continued population viability of the three aquatic species of immediate concern. The alligator population will, in fact, be positively affected by the proposed action over the long-term. The overwhelming threat to the continued survival of all three species is detrimental human activity involving guns and boats, both intentional and unintentional. Nowhere in the text can one find such bottom-line conclusions derived from the given information.

1.46 "Perhaps the most severe nuisance of the fresh waters is the prolific growth of exotic hydrophytes including..."

The excessive growth of nuisance species also occurs in unmined waters and should not be considered a problem peculiar to, or more difficult to control in, waters created as a result of mining. W-36

1.48 "...the phosphate industry currently mines slightly more total uranium than does the uranium industry."

The phosphate industry handles large tonnages of clay annually, compared to the clay mineral industry, but this in no way suggests that the phosphate industry is engaged in clay mining. The word "mines" in reference to uranium should not be confused with "processing" or "chemical refinement" of the element. Use of the term represents a misleading statement concerning ease of recovery and level of industry activity. W-37

1.49 "Figure 1.15: Average Uranium Concentrations as U_3O_8 in Typical Central Florida Phosphate District Profile."

The U_3O_8 equivalents are given for "high BPL" and "low BPL" without definition of the ranges of BPL involved. Uranium concentrations in phosphate rock vary as a function of the BPL content, the higher the BPL the higher the uranium, but the relationship may vary according to the phosphate rock size fraction. W-38

1.52 "...the average annual dose equivalent in excess of the average natural background for persons living on reclaimed land within the study area is calculated to be 540 millirems per year to the whole lung, 36 millirems per year to the bone marrow, and 22.5 millirems per year to the gonads. The average gamma exposure on reclaimed land is 88 millirems per year." W-39

The bone marrow dose in excess of background is 4 millirems per year and average gamma exposure is 70 millirems per year. The reference for the gonad dose is not indicated in the text.

1.58 "...especially in Hardee and Polk Counties..."

Change Hardee to Hillsborough.

1.59 "Mining does not appear to have played a significant role in the growth of the region since 1960." W-40

See comments concerning page 1.4.

1.61 "Table 1.30: Generalized Land Use, 7-County Study Area, 1975." W-41

Percentages shown are for study area, not county. W-42

1.62 "Under the Level-I category 'Barren Land,' the Level-II category 'Strip Mines, Quarries, and Gravel Pits' comprises only 3.12 percent of the entire study. Polk County has a noticeable concentration, however; 12.5 percent of the county is in this land-use category."

This categorization does not allow notice to be taken of the age of the mined areas nor the value of the system reestablished on the older mined areas. W-43

1.65 "Water, which includes all surface water, will increase over the 7 county study area between 1975 and 2000 by only 0.9 percent."

The 0.9 percent translates to 1,550 acres, presumably lakes created by phosphate mining. It would be surprising if a great deal more lake acreage did not result from projected mining based on past experience in Polk County. Tables 2.5 (p. 2.13) and 2.7 (p. 2.14) show much larger increases in water areas for all scenarios than the above projection. W-44

1.65 "Wetlands"

The projected decline in wetlands of -1.1 percent should be presented here and discussed. This projection is most likely to be erroneous assuming (1) state and federal protection of existing wetlands, and (2) the creation of new wetlands via phosphate mining. The "Barren Land" discussion reflects projected increases in area mined; therefore, this should be reflected in aquatic and wetland increases. W-45

1.65 "Archeological, Historical, and Recreational Resources."

Most of the 791 known sites would not be of sufficient importance to cause a professional archeologist to recommend that they be protected from mining. Very few are within the area projected for mining. These might have to be "worked" for structure W-46 and collection of artifacts prior to mining. A few might require preservation. These are decisions provided for in the site-specific DRI and EIS process. Mining, itself, often yields important data and finds otherwise buried from discovery, a positive impact not identified in the DEIS.

1.66 "Table 1.32: Extent of Recreational Areas in the Seven Counties of Study."

Nearly one-half of the recreational acres in the study area occur in Polk County as at Saddle Creek Park, largely as a result of reclamation and the creation of aquatic systems which form the primary natural attraction for outdoor recreation. While this acreage can be expected to increase dramatically as a result of future mining, no such positive impact is identified here. W-47

1.67 "It was concluded that the most useful and manageable way to analyze the impacts of present and proposed phosphate development is through reliance on existing information and studies."

Since little significant information has been accumulated on mined areas, the lack of consideration of existing literature for other systems which indicate their rate of recovery from disturbance would indicate that the conclusion to rely primarily upon existing information was much too narrowly applied. Reasoned extrapolation of available literature on comparable problems was not applied. Further, the utilization of existing literature is heavily biased toward an extensive examination of the premining condition with relatively little attention on the possibilities and potential for utilization of the postmining systems. W-48

2.3 "... the effects were added algebraically under each environmental element."

The methodology involves, predominantly, subjective assignment of values to impacts within each scenario. These ordinal rankings are then summed algebraically. The result is a quantity that has no objective meaning and that is not subject to replication. W-49

2.4 "Dry conveyor for matrix from mine to beneficiation."

There is no possibility of producing dry matrix at the mine face. W-50

2.5 "Any disturbed wetlands are to be restored to provide at least an equivalent habitat for any species on the Important Species List for which habitat existed prior to mining. Restoration is to be accomplished so that no more than ten percent of such habitat is destroyed at any one time."

It is doubted that the "Important Species List" is ecologically viable. In terms of community structure and ecosystem dynamics, all species should be considered equally important. Importance is not to be confused with dominance or frequency, and is usually applied in terms of relationship to man rather than ecosystem function. Maintaining natural system values in the area will involve the variety of habitat types, not just wetlands. W-51

The 10% figure is arbitrary. Keying mining rate to the rate at which wetlands can be restored is an impractical approach.

2.11 "Table 2.1: Assessment of World Phosphate Reserves and Resources."

The following table entries seem to be in error: W-52
Africa - Total Resources - Metric Tons
World - Other Resources - Metric and Short Tons

2.18 "...and the land cannot be used for industrial or commercial development involving structures larger than most single-family dwellings."

See comments concerning p. 1.8.

2.18 "Elimination of Slime Ponds."

Because of the unique potential of phosphate mining to create aquatic and terrestrial ecosystems economically as part of the expense of mining and because these mining operations take place in counties already so heavily impacted by man that the natural habitats are seriously diminished in quantity and quality, it is believed that the interests of society, the industry, and Nature would be best served by maximizing the creation of natural systems in the postmining environment. The DEIS often appears to favor reclamation for agricultural, industrial, commercial, and residential uses. This diverts the large cost of reclamation to subsidize man-intensive land uses already abundant throughout the study area, whereas the regional ecosystem would be most benefited by the creation of natural systems to provide the support and services necessitated by the present preponderance of man-dominated uses. W-53

Both slime ponds and sand tailings serve as the soil building blocks for forested and marsh wetlands on the clays, and scrub, sandhill, and xeric hammock habitats on the sands. Abandonment of the use of slime ponds entirely would represent a serious loss of potential wetlands. Filling the mine pits with clay and sand precludes their possible use as lakes.

2.20 "Subsequent subsidence could occur, limiting subsequent land uses to those in which overburden pressures are no greater than those resulting from agricultural production." W-54

There is no indication that subsequent land uses on sand-clay reclaimed areas will be so limited.

2.21 "The term 'dry conveyor' is a misnomer."

The term has no current meaning in the industry. W-55

2.27 "Because of the lack of data on the extent, if any, of surface and subsurface seepage and the feasibility and adequacy of impervious linings to control this potential source of pollution, effects assessment did not include an objective and quantitative evaluation of this process modification."

It must be assumed, therefore, that any recommendations relative to gypsum pond linings are subjective and unsubstantiated. Extensive study in the area is being conducted jointly by the Industry and the Florida Department of Environmental Regulation. Recommendations should not be made prior to analysis of data generated by this study. W-56

2.27 "For transporting the ore from pit to wash plant, a conveyor belt system is being tried at one location as an alternative to the conventional matrix slurry pipeline, resulting in a decrease in (water use) and electric power consumption (Hoppe 1976)."

The specific disclaimer by Mr. Timberlake, manager of the only company which uses a matrix conveyor, indicates that decreased water use does not result from use of the matrix conveyor. W-57

2.28 "To determine the net result of rainfall containment..."

The analysis is oversimplified to the extent that a generalized conclusion cannot be drawn from the calculation. W-58

2.33 "One recent applicant was given boundaries in Hookers Prairie that encompass approximately 50 percent more area than indicated on the USGS map."

The Hookers Prairie area has been significantly modified by adjacent phosphate mining operations without similar modifications being made on available maps. Further, the Corps of Engineers' determination was based on a recent observation of suitably vegetated areas. The discrepency between the observed wetted area and available maps is no doubt an extreme case, but serves to point out the necessity for site-specific work to determine the vegetative structure of an area. It is even more important to determine the functions served by an area and make certain that they are sufficiently valuable to justify not mining an area. W-59

2.33 "Those in wetlands potentially affected by phosphate industry activities are as follows:"

Many of the listed species listed as wetland range over a variety of terrestrial and aquatic communities, such as particular snakes, hawks, woodpeckers and mammals. Also, the diamondback terrapin is a creature of mangroves and brackish water, and should not be listed among the upland wetland species. Whether the eastern indigo snake, southern hognose snake, hairy woodpecker, sharp-shinned hawk, American woodcock, pileated woodpecker, and bobcat should be listed among animals endemic to wetlands is highly questionable, as well. Given sufficient time, unreclaimed mining lands have demonstrated capability to produce habitat suitable for most, if not all, of the listed species. With modern knowledge about site preparation and habitat management, equivalent habitat establishment for these and other species should be readily achievable over time. W-60

2.34 "No feasible means of restoring wetlands has been demonstrated, although reclamation can result in wet lands."

It has been the human experience that if man, glacier, landslide, or whatever causes land to be wet long enough to sustain hydrophytic vegetation, a wetland results. The USDA and USDI have been promoting and funding the construction of man-made wetlands for nearly fifty years. With built-in water management controls, man-made wetlands can exceed "natural wetlands" in productivity. One USDA administrator estimated that 3.3 million farm ponds will have been constructed in the U. S. by 1980, averaging about one acre each. The total acreage of man-made reservoirs, impoundments, and marshes undoubtedly exceeds that of farm ponds. While natural wetlands often will be superior to man-made wetlands in their over-all quality, the differences are usually attributable to construction, management, or the designed use. W-61

Man can and has constructed large acreages of wetlands with superior natural system values. The potential for doing so as part of the strip-mining process is enormous. The DEIS seriously errs in suggesting otherwise. The bottom-line concern stated in the DEIS, and held by conservationists, regulatory agency staffs, and many others is that of holding the line on the loss of wetland habitat, and secondarily that of scrub, sandhill, and hammock communities. The logic of habitat is so simple: without it management of the wildlife resource is fruitless because life is denied. Conversely, wildlife can withstand an incredible array of attacks if its habitat remains intact.

Unfortunately, most of the 3,567,723 acres in the study area is poor wildlife habitat because man has put so much of the area into alternative land uses that provide a higher immediate cash crop. Ironically, and quite by accident, much of the best remaining wildlife habitat in the minded areas is also man-made in the form of unreclaimed land. Well-intentioned conservationists, environmentalists, government leaders, even professional ecologists and resource managers may be missing the habitat message that can be abundantly read on the previously-mined landscape of Polk County (for example, Edscorn, 1977). While the Edscorn paper was available to the authors and to the Archbold study team, it had little or no apparent impact in shaping the opinions and conclusions in either report.

Modern-man is an effective destroyer of wildlife habitat, but he can be just as efficient at restoring habitat. He seldom has the chance because restoring habitat is far more expensive that destroying it. This is why strip-mining can be such a powerful force for habitat restoration, since restoration costs can be built into the pricing of the phosphate matrix, and into the mining process itself. The attention of those wanting to maximize natural habitat should be directed toward restoring more and better acreage behind the mining, rather than preservation from mining of often severely impacted habitats.

The best example of massive wetland habitat restoration can be credited to Ducks Unlimited. In 40 years, Ducks Unlimited has spent over $40 million to built 1,347 wetland habitat projects in Canada, resulting in 2.5 million wetland acres with 10,000 miles of wetland-upland edge. Their 1977 program spent $10 million on 118 new wetland habitats, adding 60,000 acres. In many drought years, a preponderance of waterfowl production occurs on the man-made marshes that hold water due to structures when the natural wetlands are dry.

The U. S. waterfowl program has a $100 million annual budget, part of which goes into establishing new, man-made wetlands. Some 15 states now sell state duck stamps to raise revenues to create and restore wetlands. These and many other case histories establish that man can build high quality wetlands. He certainly can do so as part of the phosphate mining process.

The quoted excerpt from Fisheries, Volume 2 (4):7 (DEIS p.2.35) is taken from an "opinion" editorial and not a scientific paper. Perhaps Nature does create the wetland, but man can and does saturate the land with water, which immediately starts the creative process. Wetland succession through maturity and senescence can be very rapid or very slow, depending on the specific wetland.

2.35 "Only nature can create a wetland."

If it is true that only nature can create a wetland, then it seems to be obvious to natural resource managers in the state that nature cannot maintain a wetland. The St. Mark's National Wildlife Refuge, Paine's Prairie Loxahatchee and virtually any other federally or state owned wildlife management area, particularly those with wooded areas, are under a management program of one sort or another to modify and/or maintain a certain composition of vegetation and associated organisms W-62

2.37 "Table 2.8: Environmental Impact Summary."

The economic "score" for each of the scenarios is equal, a glaring indication of the failure to seriously consider economic effects of the different scenarios. W-63

2.38 "If decision weighting factors for social and economic environmental elements had been as high as many of the weights for natural environmental elements, summary results probably would have shown net positive impacts." W-64

This bias in favor of environmental elements prevents analysis in a manner that would permit a balancing against socioeconomic benefits.

2.40 "Large clay-slime storage impoundments and stacking waste gypsum load the surface, causing the primary effect. No data exist, however, to support quantification of the potential for collapse of a slime impoundment of gypsum stack."

No data exists to support the potential for collapse since a cause-effect relationship is unlikely. In fact, loading due to slime placement in a mined-out settling area ordinarily involves stresses less than those associated with the original matrix. W-65

2.40 "...new soils will develop that may be better suited."

The "new" soils with increased clays enhance restoration of forested and marsh wetlands and mesic hammocks. Sand tailings enhance the potential for restoring scrub and sandhill communities. Evidence of dramatic improvement in growth of pines relative to growth on nearby undisturbed land is presented by Devall (1950). W-66

2.40 "Topographical effects will be caused primarily by excavations to remove phosphate ore ... however, reclamation will restore these lands to nearly their original contours."

Optimum natural system habitat restoration should not return lands to "nearly their original contours". This is one of the clear dichotomies between reclaiming for intensive human use or restoring for wildlife habitat with dense cover and sanctuary. The irregular slopes of unreclaimed land that limit access are an important factor in setting wildlife value. W-67

2.42 "Certain existing plant communities are permanently displaced."

No plant community need be displaced on the long-term if restoring that plant community is a fully-funded objective of the site-specific restoration plant. "Permanently" is a human concept as applied here. Given adequate time and no restoration, weathering, erosion, and vegetative succession, virtually every plant community present on a site prior to mining is likely to return eventually after mining. The extent and locations of the communities will change as a result, but permanent extirpation of a community type over a large area is extremely remote. W-68

2.42 "As much as 30 percent of the mined uplands/wetlands habitat becomes aquatic habitat."

The percent of wetlands depends heavily on the site-specific restoration plan and easily can be greater in acreage than the aquatic habitat. The created aquatic habitats are high in natural system values in their own right. They are also of great value and utility to man, especially in the counties with a very small lake inventory. W-69

2.42 "Habitat quality of unmined as well as mined land is degraded."

Realistically, the preponderance of land projected for mining in this area has been severely degraded already as wildlife habitat, an observation made in the DEIS. Management methods exist to offset many mining impacts on adjacent unmined habitats if they are needed. The fact remains that among the very best natural habitats existing in the area, especially from a fish and wildlife perspective, is the unreclaimed lands mined before 1950. W-70

2.42 "Diversity is diminished."

While obviously true of lands recently mined, there are no quantified data comparing diversity values for mined vs. unmined mesic hammock (as at the Christima site) or a mined, forested wetland (scrub stage) with an unmined one or, even a mined reclaimed pasture to an unmined one. These are the types of studies that would be required for an accurate evaluation of impacts.

Unreclaimed lands mined between 1900-1920 that have had 50 or more years to mature appear at least to have equal species diversity when compared to unmined habitats in the area. This opinion is based on naturalistic expertise and 30 years of field ecology, both of which are inferior to data. However, the alleged reduction in biological diversity is central to the validity of the impact assessment conclusions and until quantified studies are available, the question cannot be reconciled. W-71

Biological productivity can be of equal or greater importance than diversity, yet this is never mentioned. Net productivity appears to increase after mining, probably because of soil and water changes, increased fertility, increased edge between habitats and increased miles of aquatic shorelines. Restoration is limited only by technology and funding. As both increase, if emphasis is given to natural system restoration, diversity will increase rapidly as more niches are created and filled.

2.42 "Local populations of many important species are reduced."

All species are important. Most lands to be mined are understocked, poor habitat. Mining at any one time takes only a small portion of a particular species habitat within either the mine site or region. Reasonable rates of postmining restoration should provide increased acreages and productivity of critical natural habitats. Wildlife are resilient and will withstand a local perturbation if there are adequate habitat inventories ahead of, adjacent to, or behind the mining. W-72

2.42 "Estimates of evergreen forests are considered reliable, but it is impossible to estimate present or future areawide extents of either mixed or deciduous forests because of the paucity of data of appropriate detail."

It is a significant shortcoming of the document that it does not contain an accurate vegetative cover map and a corresponding table of acreage and percent cover by plant association. The information can be compiled from aerial photography, ground-truthing site surveys, available literary references and existing DRI's. Such information is essential for assessment of the scope and scale of potential impacts. The land area figures used in the DEIS are based on land use categories and total ecosystem extent rather than a more interpretively useful breakdown by individual plant communities. W-73

2.42 "None of the forest types can be restored to their native condition on mined lands."

This statement is refuted by several thousand acres of native forests growing on previously mined land. W-74

2.42 "The deep sand soils necessary for mixed forests are irreversibly altered."

Most of the true sandhill and scrub forests in the area seem to be outside of the lands projected for mining. At most, a couple of hundred acres may be at issue. These soils are, by nature, relatively sterile and lacking in a complex soil horizon profile and, therefore, are among the easiest of the specific plant community soil types to restructure after mining. Sand tailings should make excellent sites for xeric hammocks and mixed forests. Tailings usually have gone to dry pasture. However, there are several examples of high survival, good vigor, and growth of slash pine plantations on tailings. Restoration of sand tailings to create xeric hammocks and mixed forests could greatly increase the overall inventory of these habitats in the area. W-75

Mixed forest species are relatively shallowly rooted and more dependent upon moisture conditions than on the presence of deep sand soils. The pine flatwoods is the most common forest type in Florida. Its failure to become identically reestablished on the reclaimed soils is neither particularly significant nor should it be taken as an indication that a functionally similar or improved system would not result.

2.42 "... the loss of underlying organic hardpan precludes the re-establishment of typical pine flatwoods."

It is difficult to conceive why any land manager would recommend restoration funds be committed to creating pine flatwoods, with hardpan, when the regional inventory already is so high. The DEIS states, "By far the greatest amount of remaining forest in the study area is typical pine flatwoods" (p.1.21). W-76

2.42 "... and the configuration as well as the species composition of hammocks is destroyed."

This is not a true statement, as evidenced by mesic hammocks on mined lands, such as that at the Christina site. No effort, thus far, has been made to deliberately restore mesic hammock. All those reoccurring can be attributable to a naturally favorable site environment. If appropriate species are selected for planting and if soil and topographic factors are accomodated in the site-specific restoration plan, then establishment of a mesic hammock would be expected. W-77

2.42 "Less important but still unreclaimable in its native condition is mined rangeland."

"Rangeland" throughout the area largely is a disclimax created by man and does not have a "native condition." Pine flatwoods are the "native condition" which has been converted into range by cutting, frequent burning, disking, use of herbicides, and often eventually moving into an "improved pasture" use. The low value as natural habitat of the 2+ million acres of range and agricultural lands which will dominate every projected mining site provides a compromise that may lead sensible environmentalists to support mining if the restoration emphasis is placed on creating natural habitats. On the other hand, as part of site-specific restoration plans, rangeland can be and has been reestablished. W-78

2.43 "This is a small (3 percent) but important portion of areawide wetlands extent."

Three percent of the area inventory is indeed small and should be easily doubled or even tripled through restoration. It is difficult, in any case, to evaluate the importance of this 3% without some qualitative review of the actual habitats. W-79

2.43 "There is no indication that wetlands of any kind can be restored on mined land. Not only are the low-relief topography and attendant drainage patterns of wetlands difficult to restore, but the deep, water-logged soils of many wetlands can be neither restructured nor feasibility conserved."

This conclusion is totally erroneous. Numerous wetland habitats occur on currently and previously mined lands. Existing postmining wetlands vary greatly in quality. They exist by accident rather than design and intent. Deliberate, planned restoration could produce nonforested wetlands of greater productivity and diversity than most of those occurring naturally prior to mining. Backfilling during the reclamation process provides control over ultimate topography. Establishment of moisture and drainage conditions through soil selection and final contouring provides the starting point for wetland formation. Hydric soils develop rapidly in productive wetlands with an adequate hydroperiod. W-80

2.43 "That the quality of terrestrial habitat generally reclaimed in mined areas is inferior is readily apparent when comparing wildlife usage of managed systems with that of essentially natural systems."

The poor natural system values of recently reclaimed mined land reflect the intent to reclaim to a man-dominated end product. Even for purposeful restoration toward a natural system, it is unrealistic to compare an early succession post-reclamation system to a long established natural community. W-81

2.43 "They can be maintained at no cost to man. To maintain agricultural habitat types as such, it is necessary to use external controls..."

It should be obvious that the early post-reclamation ecosystems which received a cost or energy subsidy from man is due in part to present reclamation requirements. Early reestablishment of some vegetation type which will allow progression toward a self-maintaining community is highly desirable and achievable. To assert that young maintained systems are a desired end-product system is fallacious in any case. It is incorrect to compare a reasonably mature long-term natural system with an early post-reclamation managed system. W-82

2.43 "Habitat fragmentation will have lasting effects, likely reducing the carrying capacity of the remaining habitat for wide-ranging herbivores (e.g., deer) and carnivores (e.g., bobcat)."

The present fragmented system of either premining pasture/range conditions or the postmining reclaimed and unreclaimed areas have relatively high bobcat populations. The mixture of brushy, early succession areas, which occur either in postmining areas or in range habitat and adjacent forested floodplain or other wetland areas, offers a relatively good to ideal habitat for bobcat. In addition, deer are also recognized as being species preferring relatively open young successional stages and are not found in mature deeply wooded areas at near the same population levels. Therefore, this statement concerning bobcat and deer is incorrect. W-83

2.44 "Mining is likely to affect 12 threatened and endangered vertebrates and may affect six others (see Table 1.15) although their presence in the mining areas is doubtful."

Language suggesting that mining is "likely" to affect animals whose presence is "doubtful" is unnecessarily vague and ambiguous. Further, the endangered species impact assessment for terrestrial and wetland animals consists of one paragraph of discussion sandwiched between the treatment of erosion and commercial and recreational animals, without even a topic heading. If the reviewer refers, as directed to Table 1.15 (p.1.44) for a listing of the 18 "land and wetlands" protected species, he encounteres a list of 13 "Aquatic Species Designated Endangered, Threatened, Rare or Special Concern" virtually all of which are marine species. In fact, a table listing the 18 threatened and endangered terrestrial vertebrates does not exist. Beyond this, the referenced 18 vertebrates are not even identified! W-84

Apart from all the technical reporting problems, the only factual statement of note is mention of the inconsequential impacts on the Osprey and Caracara. It is evident from observation of mined lands that the Osprey is attracted to mined lands' water bodies. It is also quite likely that the Least Tern, Peregrine Falcon and Wood Stork will be attracted to the water bodies and uplands of reclaimed lands.

2.44 "The recreational potential of hunting quail and squirrel ... will be reduced. Deer and wild hog habitat will be reduced."

This is not expected to occur to any significant degree due to proposed mining and, in fact, quail and dove should be benefited by mining. Most game species are not creatures of the deep woods, but are adapted to and managed for on relatively young succession lands. W-85

2.45 "... but continued habitat loss eventually will eliminate certain species from the game list and degrade the quality of hunting."

No evidence is available to support the conclusion that certain species will be eliminated from the area. W-86

2.45 "Mining will adversely affect more than one-half of approximately 75 ecologically significant species in the 7 - county region."

The trend throughout the DEIS is to make incredibly generalized assessments of mining's impact on the regional biota, without reference to magnitude, duration, specific species or restoration. The vast majority of the "ecologically significant species" will experience only short-term perturbation, and many will incur negligible impacts on local populations. None of these species are either threatened or endangered. The long-term degree of assessment attempts to lump 30 to 40 vertebrates into an adversely affected category without any identification or quantification, rendering a meaningful critique of this opinion impossible. W-87

The value of a species list for protection, conservation or consideration of species from impacts decreases as the number of species placed on the list increases. When approximately half the species occurring in an area appear on one list or another, almost any action affecting the environment will affect some of the listed species. Therefore, the value of such lists as guides for planning activities having an environmental effect is vastly decreased.

2.45 "Mining activities will increase the potential of several species to reach population levels of nuisance or pest proportions. Mammal pests will proliferate around work areas and expanded urban areas. Bird pests will become more abundant in similar areas as well as on reclaimed pastures and croplands. Insect pests will proliferate around cattle, in areas devoted to monoculture, and in the nutrient-rich reclaimed lakes."

A listing of the several species potentially reaching pest proportions would be helpful in assessing the validity of this general statement. There is no documentation in the text of a proliferation of nuisance animals on lands that have been mined during the past 70-80 years, and, therefore, no reason to believe this situation will occur in the future. The fact that some mammal pests occur around work areas and urban areas is not unique to mining, and would occur no matter what the nature of cultural alteration. There is absolutely no evidence for the statement that bird pests will become abundant on reclaimed pastures and cropland. Again, a listing of these theoretical species would be necessary to further evaluate this opinion. Florida has many hundreds of thousands of acres occupied by cattle, crops and nutrient-rich lakes without any unusual proliferation of insect pests. There is no apparent basis for applying this statement to mined lands. There is considerable existing evidence to the contrary. W-88

The previously mined areas appear remarkably free of these projected effects. Most of the identified potential pest problems are associated with intensive human use or occupation of reclaimed land.

2.50 " ... and for the lower Floridan, 196 picocuries per liter."

The correct value is 1.96. W-89

2.50 "However, ground water has been and probably will continue to be locally contaminated. Specific areas of concern include the large slime impoundments, the waste-gupsum stacks, and the large process-water cooling ponds."

Evidence of radiochemical contamination of groundwater due to phosphate industry activities does not exist. W-90

2.52 "Combined loadings of chemical pollutional parameters (especially phosphates, fluorides, and total suspended solids) from discharges of nonprocess and process wastewaters to various stream segments."

Such loadings are governed by EPA effluent discharge standards. W-91

2.52 "The creation of many water impoundments that will tend to deteriorate water quality by permitting over-enrichment."

Impoundments will be created. However, water quality degradation may not be assumed. W-92

2.52 "Local surface-water deterioration from clearing, burning, construction, reclamation, slime spills, and seepage from contaminated ponds. Local water-table quality deterioration because of draining and dewatering, overburden, product storage, seepage from contaminated ponds, and reclamation of mining pits."

Surface water quality is protected by discharge standards. Groundwater contamination due to phosphate industry activity is not documented. W-93

2.52 "Local Floridan aquifer water quality deterioration from wastewater injection."

Wastewater injection has not been practiced within the phosphate industry and implementation of the practice is not contemplated. W-94

2.53 "Of the 13 aquatic species endangered, threatened, rare or of special concern, only the American alligator, Suwannee cooter and manatee might potentially be affected by phosphate industry activities.

Of these three species only the American alligator is likely to be affected. However, given the alligator's recent and continuing population expansion in Florida, any concern in the mining area is unwarranted. The creation of aquatic habitat will probably result in an increased areawide alligator population. It is interesting to note that one begins with a species list including approximately half the vertebrates occurring in the study area, reduces that to 13 aquatic species, and then finds that only one of those could be expected to be significantly affected by mining. This rather dramatically highlights the problem of a too-inclusive species list. Note that with regard to all species, no case of extirpation nor serious population decline is projected. W-95

2.53 "Slime placement poses a potential for the most significant adverse impact on rare and endangered aquatic species of the study area."

A direct connection between slime placement and the safety of rare and endangered species is tenuous at best. W-96

2.54 " ... stream ecosystems generally recover in 2 to 5 years."

This should be compared with the approximately 4000 years stated as being required for recovery of a wetland (p.2.35). The comparison points to the fact that the wetland projection is seriously in error. Every severe flood has similar effects and the stream habitats are adapted to benefit from them. W-97

2.54 " ... present reclamation must be altered to include lakes and ponds with wide littoral zones and other areas (e.g., 'marshy' islands) ..."

This paragraph is of special interest because a change in reclamation technology is recommended. Almost all the impacts discussed thus far would differ with changes in restoration technology, but this is one of the first times the authors identify or recommend a change. W-98

2.54 "The steep-sided, relatively deep lakes now predominating are of little long term value; they quickly become degraded and/or eutrophic."

Most of the mined lakes with high phosphates are remarkably slow to degrade or eutrophy when compared to most Central Florida lakes. This is precisely because of the deep open water and relatively narrow littoral zone. While the lakes can be improved in design, they should continue to be deep with an increased but still small ratio of shallows to open water. W-99

2.55 "Draining and dewatering low, wet areas, thus eliminating breeding areas for midges and mosquitos, will have a positive effect but will be more than offset by the industry's creation of additional surface water."

A quantitative projection of acreage to be drained in the 7 - county area compared to new water area created by mining activity is necessary to evaluate this impact. W-100

The pest species are areawide problems independent of mining. When mining increases aquatic and wetland systems, it increases habitat for many of the pest species. However, their "pest" status usually relates to an interface with man, which is reduced in wildland settings. Midges and mosquitos are part of the food chain for many species. Far more ecological damage has been done under the umbrella of mosquito control than by the mosquito or deliberate construction of wetlands with mosquito niches.

This discussion of aquatic nuisance and pest species seems to advocate the draining of generally viable and productive mining-created wetland, which runs counter to the desire for wetland replacement on mined lands. Studies of mining's long-existing, surface-water impoundments indicate no unusual proliferation of nuisance biota, even after 50 or more years. This adverse potential is equally as great in naturally occurring wetlands.

2.55 "The amount of standing water communities expected to directly be affected ... is relatively small and involves no major lakes, ponds, or impoundments ... Perhaps the most important consideration will be the creation of new standing-water habitat. (28,400 acres by year 2000)"

While these statements support mining, the use of "standing water habitat" is interesting. We suspect it refers to the idea that a lake is made by Nature, while man makes "standing-water habitat". W-101

2.56 " ... utilization of this potential fishery is expected to be relatively light since an outstanding marine fishery is also readily available to anglers."

The notion that high quality freshwater sport fishing is deposed by an outstanding nearby marine fishery has very little merit. Each type of fishing has its own devotees and a substantial number do both. All Florida fishing licenses sold in the area are for freshwater fishing since no license is needed in saltwater. As at Saddle Creek Park, phosphate lakes often are heavily fished and with excellent yields. The present interpretation is erroneous and misleading. W-102

This assessment represents an obvious positive benefit from the mining process. The expectation that these newly-created lakes will experience light sport and commercial fishing utilization due to the available marine fishery is contrary to reality. Freshwater and marine angling represent entirely different experiences in terms of location, economics and fishing preference. Available mining lakes have been heavily utilized for recreation and fishing by the regional populace. According to the study area's FGFWFC Fisheries Biologist, phosphate lakes provide the "best bass fishing anywhere, and the fishing quality doesn't taper off over time, as a lot of people believe". Commercial rearing of catfish and other aquatic food resource species is also a reality.

2.56 " ... the effects of the relatively small changes of freshwater discharge patterns are expected to be minor and obscured in normal discharge variations."

This has been repeatedly stated and has a quantitative base. Yet, juxtaposed are such statements as: "community-structure alterations accompanying local habitat degradation by siltation and turbidity will be manifested as reduced algal abundance, replacement of more desirable benthic forms with forms more tolerant of silty substrate, poorer condition of local fish populations because of food chain disruption and impairment of feeding activities, and reduced fish egg and larva survival", presented with no quantitative basis. W-103

2.57 " ... this will represent an adverse effect, since flowing-water communities are of greater resource value to the study area."

No basis for this contention has been presented and the statement may contradict others made concerning the value associated with lentic communities. W-104

2.60 "Phosphate industry's ownership of land has probably been the major cause of the current crescent-shaped population distribution."

This conclusion is not corroborated by any factual data. Indeed, factual historical data contradicts this hypothesis. Demographic data show that population growth has been a function of net migration. A high proportion of this migration is retirees who create the economic base for the service and trade oriented economies which characterize Charlotte, Sarasota, and Manatee counties. Mining has certainly not precluded this. W-105

Retirees and population growth in Florida is oriented around the sea shore. Internal development is generally sparse and occurs at special areas, i.e., Orlando, or at transport nodes.

2.60 "Since the service businesses catering to the needs of the retirement and tourist sectors are in direct conflict with the phosphate industry, however, there is good reason to believe that they could absorb surplus workers from the phosphate industry."

That growth of the phosphate industry has precluded growth of a tourist/retirement economy in Polk, Hardee, and DeSoto is unsupported. A more reasonable and economically justifiable argument is that the inland counties possess few of the amenities that migrants to Florida desire.

Even if expanded tourism filled the void left by a contracting phosphate industry, phosphate industry workers may not possess the skills needed for a service economy, and such workers may not be willing to accept the generally lower wages paid by service industries. W-106

2.64 "Among possible secondary effects not implied in the discussion of primary effects are certain changes occurring in coastal areas as a result of mining."

This is reaching out for completeness in identifying impacts, and the closing phrase, "the expected changes ... will have little effect," neutralizes the impact. State and federal jurisdictions are responsible for permitting harbor development to safeguard the marine environment. Such port expansions are independent from the increase in in shipping, if any. W-107

This vague discussion should be materially expanded, or deleted. It is difficult to envision potential impacts on the study area's terrestrial biota as a result of a possible future increase in harbor area.

2.67 "Development of Tampa Harbor and development of the phosphate industry are synergistic:"

Clearly they are related. That the relation is synergistic is somewhat remote. W-108

2.69 "The primary effects on these features are expected to be collapse or high-volume drainage caused by excessive surface loading and increased hydrologic head created by abovegrade storage of clay slimes and waste gypsum."

Evidence of sinkhole collapse due to waste loading is lacking. Loading due to placement of waste clay in a mined area will be less than that associated with the original matrix. W-109

2.72 "The loss of only several hundred acres of mixed and deciduous forest types (sandhills, sand pine scrub, and hammocks) will severely deplete the unknown but undoubted limited extent of these important habitats."

It is necessary to emphasize that the extent of habitat types within the study area should not simply be dismissed as "unknown" in a document of this importance. Complete aerial photography of the study area is available from several sources, as well as several general vegetative cover maps and many site-specific environmental studies done with the region.

A supplementary report utilized in large measure to prepare the biological sections of the DEIS is entitled "Fish and Wildlife Inventory of the Seven-County Region" (Layne, et al., 1977). The authors chose to excerpt the appropriate regional area of Davis' "General Vegetation Map of Natural Vegetation of Florida" (Davis, 1967) for the purpose of identifying and delineating the vegetation of the study area (p.50). Although this cover map is macroscopic in scale, it provides a reasonably accurate portrayal of the original location and extent of the nine vegetation types identified within the seven-county region.

W-110

The authors of this critique generated a vegetative impact composite graphic using Figure III H.1 (General vegetation map of the seven-county area) and Figure III I.2 (Location of holdings of phosphate companies of the seven-county area) from the above-mentioned wildlife supplement in order to determine the generalized extent of mining's total potential alteration of original natural vegetation types for this century. Neither the DEIS nor the supplemental working papers offer a figure suitable for this type of impact interpretation.

Throughout the text, the greatest concern for continued habitat viability, other than generic "wetlands," is given to the sandhill, xeric hammock and sand pine scrub vegetation types due to their relative abundance of rare and endemic flora and fauna. Based upon an interpretation of our natural vegetation/mining lands composite graphic for the study area, only about 20 percent of the total sandhill and xeric hammock habitat, and less than 10 percent of the sand pine scrub association will be altered by mining by the year 2000. These figures include the habitat altered prior to 1975. Since the majority of these forest types in Florida exist outside of the study area, and the percentage lost or temporarily displaced within the region is so small, the area-wide and statewide potential loss is relatively small (Davis, 1967; Laessle, 1958 and 1967). In addition, future reclamation efforts will seek to restore these habitat types through site-specific land preparation and plant species selection.

2.72 " ... 62 percent of the projected 4 percent areawide loss of rangeland ..."

The stated 4% does not correspond to the 7% loss indicated in Table 1.31 (page 1.63), so actual mined acreage cannot be determined. In order for a reviewer to readily grasp the projected impact of mining versus other land-uses in the various habitat and land use categories, a proper figure should be generated listing the proportional areas and percentages. Further, impacts on natural systems should be segregated by vegetation types, which would require an areawide comprehensive vegetation cover map as a prerequisite. W-111

2.72 "As wildlife habitat, waterbodies created during reclamation are, like terrestrial habitat, generally inferior to those that could develop naturally were the mining areas merely abandoned."

It is not necessarily true that created water bodies are inferior. However, this is one of the few statements reflecting author awareness that high quality natural habitats have resulted from reversion of mined lands. W-112

Given careful attention to design, construction and management, man-made aquatic systems can exceed natural ones in diversity and productivity.

2.73 "Since phosphate mining will account for most of the expected areawide change in land use by the year 2000, it will account also for most of the change in community structure."

The projections of Table 1.31 (p.1.63) show an increase in urban area of 146 thousand acres. This is by far the major change in land use through the year 2000. W-113

2.73 "Particularly will the modified habitat types replacing forests and wetlands support a smaller variety of biota and be considerably less productive in terms of life support."

It is almost inconveivable that earlier statments concerning the anticipated improvement in soil conditions and associated soil characteristics would result in conclusions about a lowered potential quality of the system reestablished on mined areas. The DEIS continues to make the comparison between a natural system which is of a relatively mature age and a post mining ecosystem of a relatively young age. No reasoned comparison can be made from such dissimilar bases. W-114

2.73 "The greatest impact on threatened and endangered species that likely will be affected by mining will come primarily from loss of uplands forested habitat."

The DEIS generally lacks even a terse discussion of habitat, range, and relative abundance considerations for the species of concern in the various threatened and endangered species sections found throughout. The reviewer has very little information, in terms of percent of specific habitat alteration or individual species ecology and abundance, that can be used to weight and evaluate the assessments of potential impact. More of the quantitative could be included, possibly with range maps for threatened and endangered species, including those for the relevant flora. Also, the species range maps in Section 5 (TI 1977e) are often somewhat at variance with those in the Fish and Wildlife Inventory volumes, from which they were probably extrapolated. The non-overlapping ranges in Section 5 for the Florida gopher frog (p.5.54) and Florida mouse (p.5.92) when compared with the Florida gopher tortoise (p.5.57) is a good example. Many others seem inconsistently mapped and probably should be revised accordingly. W-115

2.73 "There will be an increase in the proportion of managed systems that require expenditures of energy to natural systems that do not. The regional carrying capacity, which is the ability of the regional environment to sustain particular levels of activity, may be stressed."

Immediately following reclamation and in order to stabilize soils and provide for reestablishment of a natural succession, a managed system will usually be required. It can be anticipated that these systems will revert to low maintenance or self-maintaining natural systems, except where economics dictate otherwise. Carrying capacity cannot be stressed, it can merely be increased or decreased. It also has nothing to do with activity, but rather with the mass of organisms occupying an area. Consideration is also normally given to the average well-being of the organisms' mass occupying an area. W-116

2.74 "Loss of forests (and in this case, particularly wetlands) will have the greatest impact on ecologically significant species."

This "loss of forests" statement differs substantially from that on page 2.45 which addresses natural ponds and lakes and wetlands. W-117

2.74 "The impact on the hunting and trapping potential of commercial and recreational species is considered minimal, as is the impact of increased abundances of nuisance and pest species."

These minimal impact assessments on hunting, trapping, recreational, nuisance and pest species are substantially different from the assessments on pages 2.44 and 2.45. W-118

2.76 "Additional concern for the water quality of the Floridan aquifer is warranted because of the projected increased amount of injection of waste-waters as mines attempt to meet the New Source Performance Standards."

No injection of wastewater is occurring nor is any proposed. W-119

2.76 "Forests, agriculture, and open space will be areally displaced, resulting in negative impacts."

This interpretation is inconsistent with the low wildlife habitat values previously assigned to the agricultural range, and most of the forest lands. Suddenly they have a wildlife value as great as the crops they yield! W-120

The intensive, man-dominated aspect of most of the land to be mined does not seem to be remembered or incorporated in this land use section.

2.77 "The impact would be catastrophic, since irreplaceable historical resources would be lost."

The provisions of the DRI and EIS structure require that an archeological assessment of known and potential archeological and historical sites be identified and "worked" prior to site disruption. The intent is that irreplaceable historical resources will not be catastrophically lost. The text language paints an unnecessarily grave picture of mining's impact on these resources. W-121

2.77 "The conditions of this scenario would impact the area's economics and the demographic and cultural elements, as described for Scenario 2.15."

It is simply not reasonable to assume that the economic impacts are qualitatively and quantitatively identical for all scenarios.

W-122

2.78 "Timber"

Minute examination of this section is essential for the reader to be persuaded that the jumbled structure does in fact contain consistent numbers. However, actual "timber" area has never been sorted from the total forest acreage, so the evaluation is not terribly meaningful ... notwithstanding the assessment of negligible impact. W-123

2.83 "Continued holdings of large tracts of land by the phosphate industry on the north-south axis from Lakeland to Port Charlotte will continue to increase population density in the development crescent from Lakeland to Tampa and along the coast."

The driving force for coastal development is certainly not the phosphate industry. This activity will continue whether the phosphate industry holds large tracts or releases large tracts. W-124

2.83 "Accelerated phosphate mining under Scenario 2.11 could increase already inflated land values, deplete non-renewable resources, and further reduce the amount of land in agricultural production."

This curious paragraph is a lumping of all the potential ills that easily come to mind, gratuitously provided, the author unfettered by the burden of substantiation. "There is every reason to believe ..." is a troublesome opening. If but one reason were committed to paper, the task of the reviewer would be ever so much simpler.

If planned restoration creates the mix of natural habitats, lakes, and wetlands possible, these speculative adverse impacts could be strongly reversed, especially in the long-term for the scenic attraction and tourist/recreation industry. These values are presently low in much of the area projected for mining. W-125

2.85 "This reduction of abovegrade loading should effectively reduce the risk of slime pond collapse into underlying karst features."

The basis for concluding that one meter dams will be required is unknown. The risk of slime pond collapse into underlying karst features is not quantified, nor even shown to be non-zero. W-126

2.86 "Eliminating slime ponds through the sand/slime mix technique will result in a topographic surface approximating the original surface over one-half of the mine area;"

Restoration of the original topographic surface may not be an overriding consideration. In any case, the feasibility of returning to original grade depends upon site-specific considerations. W-127

2.86 "Eliminating dryers and dry grinders through the implementation of this process modification is expected to reduce airborne radionuclide concentrations in the immediate vicinity of the replaced process equipment. The impact of such a change on exposure to phosphate workers and the general population is expected to be insignificant inasmuch as current processes are also insignificant (unmeasurable); i.e., dose projections for phosphate workers have been shown to be small and well within guidelines." W-128

The first and second sentences in this paragraph are inconsistent. Elimination of dryers cannot be expected to measurably decrease exposure.

2.88 "Concern regarding contamination of the water-table aquifer by directly exposing the water table to the slime material."

The water table aquifer is presently exposed to slime material without suffering contamination. W-129

2.88 "A reduction in the potential for contaminating the Floridan aquifer through the injection of chemical processing wastewaters."

Injection is not practiced nor is it proposed. W-130

2.90 "If increases in dissolved solids in the streams were found, this might also affect the biological health of the plants that tap the water-table aquifer, receiving the surface water containing the higher content of dissolved solids ... If that were the case and the root system were sensitive to the increase of particular constituents, there could be a detrimental effect on vegetation."

The south prong of the Alafia River has a considerably elevated conductivity, nutrient content and sulfate burden in comparison to other brown water streams in the state or drainages from typical perched wetland areas. There does not appear to be any appreciable difference in vegetation composition along this waterway or others with a lower content of dissolved solids. It would seem that if an effect were going to occur, it would have by now and it would be apparent in vegetation changes. W-131

2.91 " ... it is assumed that lost production will be made up through changes in mining plans ..."

For a limited period of time, that alternative is available. In the long term, of course, the resource is lost. It should be evident that mining can take place only where the resource exists. W-132

2.91 "Although part of the void will be filled by an expanded volume of clay slimes, a net void is still expected."

The area and volume utilized for mining waste disposal depend upon the nature of the ore body, selected dam heights, distribution of tailings to backfill and dam construction, consolidation behavior of waste clays, the shape and size of the tract and numerous dynamic characteristics of the mining operation. The overly simplified statement reflects little understanding with regard to the mass and volume balance for materials involved in a Florida phosphate mine. W-133

3.1 "Reducing slime-pond extent will have a positive effect on the area's unique physical features because of the significantly reduced potential for collapse of karst features..."

If slime ponds are economically sound, ecologically beneficial, and important to restoration of natural habitats, their elimination could have a negative impact greater than the positive effect described. W-134

3.2 "Lining waste-gypsum stacks and cooling-water ponds at new chemical processing plants would reduce seepage into the underlying strata that has been suspected of enlarging lines of parting. However, data are not sufficient to quantify effectively the potential impacts due to seepage and/or collapse."

Even if the data are insufficient, it would assist the reviewer if the study suggesting a certain potential for collapse were referenced. Similarly, if the data alluded to are non-existent, it would be helpful if this item were labelled as wholly unsubstantiated speculation. W-135

3.2 "Since the effects of emissions (including those from rock-drying and chemical manufacturing) are largely unknown (or if known, are unmeasured), minimal impact had been assigned in this area."

The basic limitations of ambient air levels of suspended particulates are well defined by the EPA in both Standards for Protection of Human Health and Protection of Human Welfare. The impact of fluoride emissions is also well known, well documented and several years of data exists on ambient air levels. W-136

3.3 "In view of the fact that freshwater wetlands restoration has not been demonstrated and seems infeasible on a large scale within a reasonable time, the only practical approach to analyzing impacts of this part of the proposed action is to assume prohibition of minor development of facilities in waters of the U.S. and wetlands as shown in the LUDA maps."

The notion that freshwater wetlands restoration has not been demonstrated is completely erroneous. Wildlife biologists involved with waterfowl management recognize that high quality wetlands can be made by man over large acreages and short times. They are among the easiest natural habitats for man to establish through construction and management. W-137

Thus the approach taken to analyze impacts of this part of the Proposed Action is incorrect.

3.5 "No projections are made on water quality effects for New Source Chemical Plants, because none are expected in the proposed action. However, in the event development does not follow projections, and application is made for a New Source Chemical Plant, the proposed action requires more stringent limitations than EPA New Source Performance Standards to protect water quality in the affected basins."

Data do not exist to support the contention that more stringent water quality limitations are necessary. Similarly, with regard to groundwater, data do not support the proposed need for gypsum pond liners. W-138

3.6 "Changes in background radiation levels could occur also in association with replacing dry-rock grinding with wet-rock grinding and eliminating dryers;"

If changes occur, they will be too insignificant to measure (see pages 2.86, 2.87). W-139

3.7 "However, since mining activities are expected to merely shift to lands not classified as U.S. waters or wetlands and since sufficient reserves exist within the study area to accommodate the required shift in mining operations between now and the year 2000, such exclusions will not materially affect production tonnages previously estimated for the two time periods under Scenario 2.11."

This is a totally inadequate evaluation of the impact of prohibiting mining. W-140

4.3 "Return land to approximate original contour ..., etc."

The administrative requirement to mention the Federal Surface Mining control and Reclamation Act of 1977 is recognized. However, the inclusion of specific provisions seems to be a tacit expression of applicability. The listed recommendations cannot be assumed to be useful in the present situation, nor even pertinent, and they should therefore be deleted from the text. W-141

4.3 "System monitoring should be complemented with once-per-shift manual sampling to ensure that the automated equipment is efficiently operating."

Presently required monitoring and optional (but generally utilized) alarm systems are sufficient to properly protect the environment from spills. W-142

6.1 "Land-use changes caused by mining will narrow future land-use options, especially in reclaimed slime pond areas."

Slime pond soils represent a new soil type for the area. Agricultural production of one sort or another will continue to be a major and important use in the area. All pre-mining soil types will continue to exist in the area. Therefore, it would appear that future land use options are not appreciably narrowed. W-143

6.1 "Time beyond the year 2000 would be needed to reestablish the natural system of most of the habitat types."

Reestablishment of the natural system is recognized as a realistic outcome within a reasonable period of time following mining. W-144

BIBLIOGRAPHY

Council on International Economic Policy, Executive Office of the President. 1974 *Special Report, Critical Imported Materials.*

Davis, J. H. 1967. General map of natural vegetation in Florida. Agr. Exp. Sta., Inst. Agr. Sci., University of Florida.

DeVall, W. B. and C. L. DeVane. 1950. "A Field Survey of Florida's Pebble Phosphate Striplands." *Journal of Florida Academy of Sciences* 12(1): 21-34.

Drury, W. H. and I.C.T. Nisbet. 1973. "Succession." *Journal of the Arnold Arboretum* 54(3): 331-368.

Edscorn, J. B. 1977. "Wildlife Values may be Negated by Phosphate Mine 'Reclamation'." In Layne, J. N., *et al.* 1977. *Fish and Wildlife Inventory of the Seven-County Region Included in the Central Florida Phosphate Industry Areawide Environmental Impact Study.*

Hurlbert, S. H. 1971. "The Non-concept of Species Diversity: A Critique and Alternative Parameters." *Ecology* 52: 577-586

Küchler, S. W. 1964. Manual to accompany the map "Potential Natural Vegetation of the Coterminous United States." *Amer. Geogr. Soc. Spec. Pub.* No. 36

Laessle, A. M. 1958. "The Origin and Successional Relationship of Sandhill Vegetation and Sand-pine Scrub." *Ecological Monographs* 28(4): 361-387.

Layne, J. N., *et al.* 1977. *Fish and Wildlife Inventory of the Seven-County Region Included in the Central Florida Phosphate Industry Environmental Impact Study.*

Olson, J. S. 1958. "Rates of Succession and Soil Changes on Southern Lake Michigan Dunes." *Bot. Gaz.* 119: 125-170.

Texas Instruments Incorporated. 1977e. "Water." *Central Florida Phosphate Industry Areawide Impact Assessment Program, Volume V.*

U. S. Department of the Interior. 1956. "Wetlands of the United States." USDI Circular 39.

Whittaker, R. H. 1953. "A Consideration of Climax Theory: The Climax as a Population and Pattern." *Ecological Monographs* 23(1): 41-78.

3-50

ATTACHMENT B

Contents:

U. S. Environmental Protection Agency letter dated April 18, 1978 to Holland & Knight

Holland & Knight letter dated June 19, 1978 to U. S. Environmental Protection Agency

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 18 1978

OFFICE OF
GENERAL COUNSEL

Mr. Roger Sims
Holland & Knight
P.O. Drawer B.W.
92 Lake Wire Dr.
Lakeland, Florida 33802

Dear Mr. Sims:

This is in response to your letter of March 23, 1978, to Mr. Jeffrey Gaba, requesting that the Office of General Counsel clarify EPA policy on implementation of the Florida Phosphate Area-Wide Environmental Impact Statement (Area-wide EIS). Although the Agency has not in the past prepared such a broad-based impact statement for new source development, the Area-wide EIS is viewed as an important adjunct to the site specific impact statements (site specific EIS), prepared pursuant to §102(2)(C) of the National Environmental Policy Act, 42 U.S.C. §4332(2)(C), and §511(c)(1) of the Clean Water Act, 33 U.S.C. §1371(c)(1), for new sources having significant environmental impacts. Through these site specific EISs, EPA is able to identify and minimize the adverse environmental impacts associated with the issuance of new source permits, and it is the Agency's policy that EIS recommendations be implemented whenever possible-either by their inclusion as conditions in permits themselves or by separate agreement.

The Area-wide EIS prepared for the Florida Phosphate Industry serves the same basic function as the site specific EIS; it identifies environmental consequences and allows the Agency an opportunity to minimize their effects. However, the Area-wide EIS offers a range of means for achieving this goal. As the Council on Environmental Quality noted:

> [T]he program statement has a number of advantages. It provides an occasion for a more exhaustive consideration of effects and alternatives than would individual action. It ensures consideration of cumulative impacts that might be slighted in a case-by-case analysis. And it avoids duplicative reconsideration of basic policy questions.

CEQ Memorandum to Federal Agencies on Procedures for Improving Environmental Impact Statements, 3 Env. Rep. 82, 87 (May 16, 1972). See also 40 C.F.R. §1500.6(a) and (d); Scientists' Institute for Public Information v. AEC, 481 F.2d 1079 (D.C. Cir. 1973); Minnesota PIRG v. Butz, 358 F.Supp. 584 (D. Minn. 1973).

Since the Area-wide EIS deals with a variety of complex problems, both cumulative and site specific, no one scheme for the implementation of its recommendations may be appropriate. Consequently, the Agency plans to implement those recommendations based upon the nature of the problems identified. Although any new source must meet all applicable existing legal requirements identified in the Area-wide EIS, additional recommendations will be implemented in the following manner.

Site Specific Impacts: Certain of the recommendations in the Area-wide EIS deal with problems which have only local, site specific effects but which occur at most sites subject to phosphate development. Analysis of these local problems in an Area-wide statement allows for thorough consideration while avoiding duplicative review of similar problems in a series of site specific EISs. Where the Area-wide EIS has reviewed a local problem its recommendations will be presumptively applicable at a new source.

However, since these recommendations deal with site specific problems they are necessarily subject to analysis and possible revision by a site specific statement. First, specific plans are needed to implement general recommendations, and thus, the site specific EIS will tailor any recommendation to meet the localized condition of a particular area. Second, the recommendations themselves may be modified where the site specific EIS identifies alternatives as effective as those proposed in the Area-wide EIS, indicates that they are unnecessary due to unique local factors, or otherwise indicates site specific factors making modifications appropriate.

These site specific recommendations include:

Mining-

1. Elimination of conventional above ground slime disposal areas.
2. Provision of storage that allows recirculation of water recovered from slimes.
3. Use of "connector wells" for mine dewatering.

Chemical Processing-

1. Lining of gyp ponds.
2. Recirculation of contaminated and non-contaminated water.
3. Recovery of fluorine where economically possible.
4. Recovery of uranium where economically possible.

Cumulative Impacts: Analysis of cumulative effects is uniquely an aspect of an Area-wide statement, and such analysis can not be effectively replaced by site specific studies. Recommendations to minimize these cumulative impacts associated with development of the phosphate industry will be implemented where possible, and, with only limited exceptions, such recommendations may not be modified on the basis of a site specific EIS.

1. Elimination of rock drying.

The Area-wide EIS has identified cumulative particulate, radiation and energy problems associated with the drying of mined phosphate rock, and the EIS has concluded that elimination of rock dryers at new plants is an effective and economically reasonable method of dealing with these problems. However, the Area-wide EIS indicates that there may be case-by-case modification of this recommendation where rocks are to be shipped outside of Florida for chemical processing. If the energy for transporting the moisture is greater than the energy saved by elimination of drying, consideration may be given in a site specific EIS to drying at a benefication plant if air quality, including radiation, can be adequately protected.

2. Limitation of Wetlands Development.

The piecemeal destruction of environmentally significant wetland areas is one of the more significant impacts identified by the Area-wide EIS. To avoid such destruction the EIS has concluded that regulation of wetlands development is necessary, and it contains recommendations that development be precluded in the most sensitive wetlands (Category 1), be subject to strict reclamation restrictions in less sensitive areas (Category 2), and be unregulated with respect to reclamation in certain isolated and intermittent wetlands (Category 3). It was impossible in the Area-wide EIS to identify the classification of all areas covered by the EIS, and only a general description of the categories was provided. It will be necessary to precisely classify proposed development sites on a case-by-case basis, and the site specific EIS is one method by which such localized analysis may be performed.

Although site specific analysis is an essential part of implementation of this proposal, the basic recommendations of the Area-wide EIS may not be modified. Thus, while the site specific EIS may determine the category of wetlands into which an area belongs, the consequences of that classification is determined on the basis of the Area-wide EIS.

Recommendations for future government action: Certain recommendations contained in the Area-wide EIS may not be directly implemented, and in such cases, the analysis of the problem and proposed solution may form the basis for future government action. These recommendations include:

1. Modification of process controls and monitoring requirements for existing sources.

2. More stringent effluent limitations in new source chemical plants.

Although the Area-wide EIS concluded that chemical processing facilities are capable of achieving effluent limitations far lower than those contained in existing new source standards of performance and that such lower limits are necessary to preserve water quality, existing law precludes directly implementing lower effluent limitations based on recommendations contained in the EIS. These recommendations can, however, form the basis of future government regulations, and they may be implemented by modification of current new source standards of performance or state water quality standards, or by establishing stricter water quality based effluent limitations under §302 of the Clean Water Act. This conclusion does not, of course, mean that new facilities will not be required to satisfy existing Florida water quality standards, and such standards will be implemented on a permit-by-permit basis.

I trust that this letter has clarified EPA's position on implementation of the Area-wide EIS, but if there is any further information that I can supply please feel free to contact me or Mr. Gaba.

Yours truly,

Alan W. Eckert

Alan W. Eckert
Acting Associate General Counsel
Water Quality Division (A-131)

SPESSARD L HOLLAND (1892 1971)
MARK J APPLEGATE
MARTHA W BARNETT
BERNARD A BARTON JR
THOMAS R BAYLESS
CHARLES E BENTLEY
WILLIAM F BEVIS
ROBERT N BUTLER
JULIAN CLARKSON
HUME F COLEMAN
MICHAEL B COLGAN
F ALAN CUMMINGS
GREGORY R DEAL
ROY E DEAN
CHARLES W DODSON
BRIAN C ELLIS
ROBERT R FEAGIN III
DENNIS R FERGUSON
JOHN W FROST II
JOHN GERMANY
ROBERT B GLENN JR
WARREN M GOODRICH
WARREN E HALL JR
RICHARD A HAMPTON
PAUL D HARDY
WILLIAM O E HENRY
MALKA ISAAK
MICHAEL L JAMIESON
JOHN ARTHUR JONES
H BURKE KIBLER III
HENRY M KITTLESON
P O KNIGHT JR
EDWARD F KOREN
D BRIAN KUEHNER
JAMES V LAU
JOHN R LAWSON JR
PAUL E LOGAN
WILLIAM H MCBRIDE JR
ANTHONY J MCNICHOLAS III
C PARKHILL MAYS JR
HOWELL W MELTON JR
STEVEN D MERRYDAY
RULON D MUNNS
ROBERT P MURRAY
JACK S NEWSOME
JOHN R PURCELL
JOHN RADEY
ROBERT C RASMUSSEN
JAMES M REED
ROBERT L RHODES JR
BRUCE H ROBERSON
RONALD J RUSSO
GERALD V SARBO
HARRY M SAWYER JR
ROGER W SIMS
CHESTERFIELD SMITH
RICHARD B STEPHENS JR
W DANIEL STEPHENS
WOFFORD H STIDHAM
BRUCE STONE
MARK R STRALEY
HARRY O THOMAS
HENRY TOLAND
EDWARD W VOGEL III
CHARLES C WHITAKER II
TEDD N WILLIAMS
C STEVEN YERRID

LAW OFFICES
HOLLAND & KNIGHT

P O BOX 1088
245 SOUTH CENTRAL AVENUE
BARTOW FLORIDA 33830
TELEPHONE (813) 533 1151

P O BOX 1669
406 THIRTEENTH STREET WEST
BRADENTON FLORIDA 33506
TELEPHONE (813) 746 7107

P O BOX 2441
2075 WEST FIRST STREET
FT. MYERS FLORIDA 33902
TELEPHONE (813) 332 5167

P O DRAWER BW
92 LAKE WIRE DRIVE
LAKELAND, FLORIDA 33802
TELEPHONE (813) 682-1161

P O BOX 3076
1100 TAMIAMI TRAIL
SARASOTA, FLORIDA 33578
TELEPHONE (813) 365 3321

P O DRAWER 810
BARNETT BANK BLDG
TALLAHASSEE, FLORIDA 32302
TELEPHONE (904) 224 7000

P O BOX 1288
EXCHANGE NATIONAL BANK BLDG
TAMPA FLORIDA 33601
TELEPHONE (813) 223-1621

CABLE ADDRESS
HND KNIGHT
TELEX 5-2630

PLEASE REPLY TO Lakeland

June 19, 1978

Alan W. Eckert
Acting Associate General Counsel
Water Quality Division
U. S. Environmental Protection Agency
Washington, DC 20460

RE: Florida Phosphate Area-Wide
Environmental Impact Statement
("Area-Wide EIS")

Dear Mr. Eckert:

Thank you for your letter dated April 18, 1978, in which you explained EPA's current posture on implementation of the Area-Wide EIS. We agree with your conclusion that existing law precludes implementation of lower effluent limitations for chemical plants based on recommendations contained in the study (page 4) and further wish to acknowledge EPA's consistent position that it has "no direct legal authority to change requirements for existing sources" on the basis of the Area-Wide EIS (page 1.74 of the draft EIS).

The Florida Phosphate Council and its member companies, however, wish to raise a few basic areas of concern in response to your letter. In the first place, the National Environmental Policy Act of 1969 ("NEPA"), which provides the authority for preparation of environmental impact statements, does not authorize promulgation of regulatory provisions. An EIS is a report, to be used by decision-makers in reaching particular conclusions. It also provides a record of decision making for the benefit of the public. We find no authority for the proposition that binding restrictions or conditions on development may be developed through the EIS process, however. Although such conditions could perhaps be developed through rule making proceedings authorized by other statutes, NEPA is primarily a "full disclosure law" and imposes a requirement that agencies make decisions with an environmental conscience.

Moreover, the basic unit of EIS analysis is the site-specific impact statement. Planning Level and Program Impact Statements under the National Environmental Policy Act: A Definitional Approach, 23 U.C.L.A. L. Rev. 124, 147 (1975). No area-wide or program EIS should interfere with the full consideration of alternatives available to a site-specific proposal, since the consideration of such alternatives must be accomplished "to the fullest extent possible". NEPA, § 102.

I. PRESUMPTIVE APPLICABILITY OF CERTAIN RECOMMENDATIONS REGARDING "LOCAL PROBLEMS"

We understand that the Area-Wide EIS will not be the only review of phosphate industry "new sources" pursuant to NEPA. Presumably, all new sources that meet the threshold test of "major federal action" and "significant environmental effect" will be subject to additional site-specific NEPA review before issuance of necessary federal permits.

On page 2 of your April 18, 1978 letter, you note that certain Area-Wide EIS recommendations dealing with "local problems" will be subject to analysis and possible revision during site-specific studies. This concept is consistent with NEPA, in that it provides for tailoring of area-wide recommendations and site-specific recommendations to the particular facts and detailed proposals regarding each project, allowing full consideration of alternatives.

The formulation of restrictions on an area-wide basis, however, without consideration of site-specific factors and development plans, is not consistent with the intent or goals of NEPA. The Area-Wide EIS should be used in the overall evaluation process directed toward approving, approving with conditions, or denying a particular permit or other major federal action. In the landmark Calvert Cliffs' decision, the court noted that

> NEPA mandates a case-by-case balancing judgment . . . particular economical and technical benefits of planned action must be assessed and then weighed against

> the environmental costs; alternatives must be considered which would affect the balance of values; . . . the point of the individualized balancing analysis is to ensure that the optimally beneficial action is finally taken. Calvert Cliffs' Coordinating Committee, Inc. v. United Atomic Energy Commission, 449 F.2d 1109, 1123 (D.C. Cir., 1971).

We submit that site-specific review may appropriately incorporate data and consider recommendations from the Area-Wide EIS, weigh them against site-specific economic and technical factors and site-specific impact analysis, and reach a conclusion which may support specific action regarding the proposed development. Such site-specific considerations would also apply to the other category of recommendations listed in your letter (cumulative impacts).

However, it is our view that the recommendations in the Area-Wide EIS cannot and must not assume the status of inflexible regulatory requirements.

II. FINALITY OF RECOMMENDATIONS REGARDING CUMULATIVE (AREA-WIDE) IMPACTS

The "cumulative impacts" category addresses the elimination of rock drying (with certain very limited exceptions) and limitations on wetlands development (preclusion of mining in certain wetland areas). EPA takes the position that these Area-Wide EIS recommendations are conclusive, and argues that no site-specific factors may justify modification or revision thereof. We submit that this is inappropriate and that site-specific flexibility must be maintained so as not to preempt the fulfillment of NEPA during site-specific reviews.

A. Rock Drying

The recommendation of the Area-Wide EIS regarding elimination of rock drying does allow some flexibility on a "case-by-case basis" where rock would be shipped outside of Florida for chemical processing, and also recognizes that rock to be utilized in triple superphosphate, elemental phosphorus, defluorinated rock feed, or other fertilizer processes requiring dry rock would be dried at chemical processing complexes or dryers permitted by the state prior to publication of the draft Area-Wide EIS ("DEIS").

As existing facilities are closed down and new facilities are phased in, however, restrictions on construction of new rock dryers would logically result in a diminishing supply of dry rock. A dozen phosphoric acid chemical plant complexes in Florida currently require dry rock, and conversion to wet rock (in order to accommodate the wet rock supply coming from the new mines) would cost over 10 million dollars per facility.

Furthermore, the DEIS suggests that restrictions on rock drying may not be necessary:

> . . . eliminating dryers and dry grinders [and the resulting change in exposure to radionuclides] . . . is expected to be insignificant inasmuch as current processes are also insignificant (unmeasurable); i.e., dose projections for phosphate workers have been shown to be small and well within guidelines. [DEIS, P. 2.87].

Finally, the DEIS makes no reference to existing regulations for the prevention of significant deterioration of air quality ("PSD") administered by EPA (40 C.F.R. § 52.21) and by the state of Florida [Rule 17-2.04, Fla. Admin. Code]. Under these PSD rules, new rock dryers cannot be permitted unless the projected impact is within acceptable, specifically described increments. We submit that PSD is by definition a program for controlling cumulative, area-wide impacts and that any attempt to preempt these regulations and eliminate rock drying through an Area-Wide EIS is arbitrary, capricious and beyond delegated legislative authority.

B. Wetlands

The DEIS poses certain restrictions that might preclude phosphate mining in various wetlands or waters under the jurisdiction of the Corps of Engineers pursuant to Section 404, Federal Clean Water Act. Again, no consideration would be allowed for site-specific economic or technical factors, or for developments in wetlands restoration techniques. The DEIS, on page 2.91, notes that where the Area-Wide EIS would preclude mining in wetlands, "potentially lost tonage will be made up through changes in mining plans . . .". This does not recognize that phosphate rock must be mined where it is found. Thus, rock located in areas designated for restriction by the EIS would be lost.

Furthermore, existing regulations fully provide for wetlands review, including cumulative impacts. For example, the Corps of Engineers has promulgated guidelines at 33 C.F.R. Parts 320-329, 42 Fed. Reg. 37121 (July 19, 1977), which include a "public interest review" [33 C.F.R. § 320.4(a), 42 Fed. Reg. 37136 (July 19, 1977)] and a "wetlands review" [33 C.F.R. § 320.4(b), 42 Fed. Reg. 37136 (July 19, 1977)]. These reviews would take into account cumulative or area-wide impacts [(See § 320.4(a)(2)(iv) and § 320.4(b)(3), both found at 42 Fed. Reg. 37136 (July 19, 1977).]

EPA has also promulgated detailed, comprehensive guidelines for evaluating impacts from proposed actions under Section 404, Federal Clean Water Act, found at 40 C.F.R. Part 230. These guidelines should be implemented in coordination with the Corps of Engineers review under 33 C.F.R. Parts 320-329 at the time a specific proposal is made. Thus, although Area-Wide EIS recommendations may be considered by reviewing agencies under these existing wetlands regulations, the Area-Wide EIS should not preempt such regulations or restrict the exploration of alternatives at the site-specific level.

As indicated in technical comments submitted by the Florida Phosphate Council to the record of the DEIS hearings, there are many factors to consider in evaluating proposed activities in wetland areas. Such evaluation must be conducted prior to the formulation of specific policies. Current Corps of Engineers and EPA regulations should be applied in developing any specific controls on phosphate mining or construction activities in wetlands. The Area-Wide EIS may serve a valuable, but not controlling function in this process.

* * * *

In conclusion, we reiterate our intention to raise only a few basic concerns herein regarding proposed implementation of the Florida phosphate Area-Wide EIS. We urge that EPA affirm the need for maximum flexibility at the site-specific EIS stage, where all relevant factors may be balanced during consideration of practical, specific alternatives. This is not only consistent with applicable laws, but is in the best interest of all parties.

Sincerely,

HOLLAND & KNIGHT

Roger W. Sims

RWS:pm

cc: Mr. Homer Hooks

ATTACHMENT C

Contents:

Florida Phosphate Council letters dated November 15, 1977, January 12, 1978, and February 9, 1978 to U. S. Environmental Protection Agency

JUN 23 1978

phosphate
feeds you

Suite 24, Executive Plaza
4406 S. Florida Avenue • P.O. Box 5530
Lakeland, Florida 33803
Telephone 813/646-8583

Homer Hooks
President

November 15, 1977

Mr. R. E. McNeill
Project Officer
EPA Region IV
EIS Branch, Phosphate Study Unit
345 Courtland Street
Atlanta, Georgia 20208

Dear Gene:

Subject: Comments on "Draft Summary Outline
Probably Scenario to be Recommended By
EPA Phosphate Unit"

As you requested, we submit herewith our comments on the above document and urge that you and other members of the Steering Committee consider these recommendations most carefully in formulating the draft scenario:

"Page 1, I. New Sources -- A. Mining and Beneficiation -- 1. Air Quality"

Comment: *The elimination of rock drying at beneficiation plants would effectively restrict export of phosphate rock from new mines. Also, no provision is made for the rock used by electric furnaces or defluorinated rock or triple superphosphate plants which must have dry rock as feed.*

"Bases: -- i"

Comment: *Citing drying process emissions of approximately 10,000 tons of particulates annually by the year 2000 is an error in calculation. For a large phosphate dryer of about 400 tons an hour, the particulate allowance in the State of Florida is 44 lbs./hr., which equates to about 55 tons/yr. for a million tons per year drying operation. Using EPA's value of 10,000 tons per year of particulate would result in the drying of 182 million tons of rock per year. If 20 million tons a year of rock were dried in future mines, the value would be about 1100 tons per year of particulate emission. Thus, EPA is high by a factor of about 10 on this basis.*

The statement that "A significant quantity of radionuclides would also be emitted in these areas if the drying process were used" is misleading and taken out of context from the EPA report, "Population Radiation Dose Estimates From Phosphate Industry Air Particulate Emissions." On page 12 of the Draft Report of May 1977, the statement is made, "The results of this study show small, but measurable, increases in tests for radioactivity surrounding the phosphate industry operations." It further states, "Dose projections provided in Tables 15 and 16 also show the small magnitude of airborne

Chairman of the Board Wm. H. Funk Gardinier, Inc.
Agrico Chemical Company • Borden, Inc. — Chemical Division/Smith-Douglass • Brewster Phosphates (American Cyanamid/Kerr-McGee) • Conserv. Department of Philipp Brothers Division of Engelhard Minerals & Chemicals Corp. • Electro-Phos Corporation • Farmland Industries, Inc. • Freeport Chemical Company • Gardinier, Inc. • W. R. Grace & Company, Agricultural Chemicals • International Minerals & Chemical Corporation • Mississippi Chemical Corporation • Mobil Chemical Company • Occidental Chemical Company • Royster Company • Stauffer Chemical Company • Swift Agricultural Chemicals Corporation • T/A Minerals Corporation • USS Agri-Chemicals

particulate radioactivity released from the phosphate industry operation. It appears that drying operations are the most significant source of airborne radioactive particles." The import of this statement is that the magnitude is small, and that the dryers contribute most of it. It is misleading to say that the dryers emit significant quantities of radionuclides.

"Bases -- ii"

Comment: *Net energy savings cited as one barrel of oil per ton of rock dried is in error. This would require 42 gallons of oil to dry a ton of rock; whereas a good industry value is 2.5 to 3.0 gallons/ton. A 20% moisture value is used, which is high, since phosphate rock generally averages about 12% moisture.*

"Possible Exception on Case by Case Basis:"

Comment: *The cost of drying a ton of rock using the current price of $12.00 per barrel of oil, is 71.3¢ to 85.5¢ per ton. For 12% moisture rock, wet rock shipments would contain 0.136 tons water/ton dry rock. Thus, if the freight cost is over $6.29/ton, it would be more than the cost of drying, using current oil prices.*

Air quality protection using two-stage scrubbing or bag filtration equipment is cited. Two-stage scrubbing is not required to meet the Florida process weight table. All the operations in Florida that have wet scrubbers use one stage of scrubbing. Bag filtration equipment is not used, since it is an impractical application for drying phosphate rock, due to severe equipment operating problems.

PROPOSAL -- We propose that the industry be permitted to develop the most economical methods of processing with adequate environmental controls. Particulates and any associated radiation are controllable with present technology.

"Page 2, 2. Surface Water Quality"

Comment: *All operations will have to meet EPA effluent limitations and Florida water quality and EPA water quality standards, whatever they may be.*

"3. Eliminate above natural ground slimes disposal areas, by a method such as pre-thickening of slimes, combining with tailings, and utilizing combined material for filling mined-out cuts."

Comment: *The requirement to eliminate above-ground waste clay disposal areas cannot be met for the following reasons:*

1. *Proven technology does not exist.*
2. *In order to achieve final grade at original ground level, the clay or sand-clay mixture will have to be stacked above ground to allow for consolidation and dewatering.*

3. *Variations in ground contours will necessitate retaining dikes in some areas.*

4. *An initial above-ground clay disposal area must be constructed prior to the start of mining. Only after some time period has elapsed will sufficient mined-out area be available to begin waste disposal operations below ground.*

PROPOSAL -- Utilize developing technology to minimize above-ground slimes disposal areas, recognizing the need for an initial slimes storage facility, and the desirability of a timely and balanced land reclamation program.

"Bases"

Comment: 1. *The 1972 State of Florida dam regulations have been effective in eliminating dam breaks.*

2. *A requirement that all waste clays be placed below ground will, in fact, eliminate several options for land reclamation: lakes and rolling topography, for example. Better land for both wildlife habitat and for economic development may be achieved by a balanced reclamation plan that will involve some above-ground disposal in order to avoid placing waste materials over the entire mined area.*

3. *After self-weight consolidation, slimes typically retain 75 to 80 percent water, not 92 to 96 percent, as stated. Approximately 1000 gallons of water per ton of rock is tied up, not 200 gallons, as stated.*

4. *We have seen no data on plant-scale operations to show that new disposal methods will cost the same as conventional impoundment.*

"Disadvantages"

Comment: *This language indicates that if a process is developed to allow economical chemical processing of slimes, new source mines should adopt such a process immediately. This implies that mines should then enter into the chemical plant business. We do not believe that this is the intent. The decision on whether or not to enter into the chemical plant business should be a company decision because of the large magnitude of capital investment and market considerations involved, and should not be a requirement for a permit.*

"Page 3, 4. Groundwater Quantity -- b."

Comment: *The draft states, "Basically, 100% of process water should be recirculated on an annual basis." This cannot be done, since process water is not a separate circuit and mixes with the water going to the slimes pond, which retains a significant* *portion of the water. In addition, some well water is required in one stage of the flotation process. This requirement is impossible to meet. Current recirculation rates in the industry are about 85% to 90%. If recirculation is required in the scenario, it should be defined in detail.*

The draft states, "Maximum pumping from wells should approximate the losses to evaporation during periods when evaporation exceeds rainfall over a 30 day period." It is impossible to determine accurately evaporation and rainfall values over an entire mining property. This was explored in great depth with EPA on the effluent guidelines for phosphate fertilizer plants, and EPA eventually eliminated this requirement in the regulations. It is impossible to determine accurately the areas of evaporation plus transpiration that occur, and it is equally impossible to obtain accurate rainfall values, since scattered rainfall occurs in this area. Within a 15 mile range in this area, it has been found that annual rainfall may vary by 10 inches.

"Page 4, 6. Radiation"

Comment: *In our opinion, air emissions from rock dryers are not a radiation problem.*

"Page 4, 7. Reclamation"

Comment: *The concept of maintaining constant acreage of wildlife habitat needs to be explained in more detail. If the goal is to maintain wildlife populations, constant acreage is not the only way, and probably not the best way, to achieve it. The statement that area to be mined is a large percentage of wildlife habitat currently available is not supported by DRI's already prepared nor by the working papers.*

TI's working paper, "Future Land Use", p. 2.3, projects a decrease in existing wetlands of 1.1% between 1975 and 2000. Furthermore, it may be desirable to alter existing wildlife populations in some areas for specific management purposes, e.g., fisheries, waterfowl, etc.

Conflicting Federal, State and local requirements make this most difficult if not actually unworkable. Different agencies cannot seem to agree on the best reclamation practices and objectives.

PROPOSAL -- Mining and reclamation plans will be designed to maintain a wildlife population. Proposed alterations in wildlife habitat must demonstrate specific desirable management goals.

"Page 4, 7. c."

PROPOSAL -- Wetlands which are under the jurisdiction of the Corps of Engineers Section 404, Federal Water

Pollution Control Act, will be protected or restored. Those wetlands for which permits are issued to mine will be restored to provide a physical basis for reestablishment of natural functions.

"Page 5, B. Chemical Processing -- 2. Surface Water Quality"

Comment: *The values given for the "old" EPA Standards of Performance For New Sources are incorrect, in that TSS criteria do not apply if the process wastewater (pond water) is treated before discharge. These TSS values should be removed.*

The "new (area-wide EIS)" requirements for 30 day average are less than one-third for phosphorus, and only 40% for fluoride. They should not have any TSS requirements. Laboratory work done by EPA itself, in EPA's own laboratories, on a number of gypsum pond water samples from this area and other areas of the country, were used to establish the so-called "old (current)" EPA Standards of Performance For New Sources. Technology does not exist to meet the "new (area-wide EIS)" proposed requirements, as shown by EPA's own laboratory work for gypsum pond water.

In evaluating current effluent quality as reported to EPA on a quarterly basis, it is most likely that the data represent non-process water discharges, since process wastewater (pond water) is only discharged a few weeks per year (after liming and settling), or for some plants, not at all. However, when water is discharged, EPA requires analyses on effluent leaving the treatment system before any dilution.

The draft recommends that the non-process water system be designed for complete recirculation with the same design surge capacity as a contaminated process water system, and the same standards for discharge are applicable. The same standards (process wastewater) for discharge now apply to non-process water. This proposal is not technically feasible, since a substantial amount of the non-process wastewater source is from boiler blowdown to eliminate dissolved solids and from cooling towers to eliminate dissolved solids. It is not possible to recirculate this water back to the boilers or cooling towers without treatment. Such treatment would then again provide regenerated waste streams which cannot be put back either. The best way to use this water is to dispose of it in a mining operation, if the company has its own phosphate mine nearby, since it would be suitable for this use in the mine circulation system.

DER mining effluent guidelines effective October 1, 1977, regulate phosphorus in mining effluent. Adding non-process water to the mining circuit may increase phosphorus levels above allowable values.

"Page 6 - Basis"

Comment: *It is stated that several chemical complexes have converted to complete recirculation of both systems; that is, including non-process water. We do not know of any chemical plant that has a closed circulation system for non-process water. The one plant referred to that does not have an NPDES permit does not recirculate non-process water, but puts it into their mine water circuit, which is the best place for it. The statement citing recirculation systems for non-process water should be removed.*

"Page 7, 3. Ground Water Quality"

Comment: *It may be that, at a specific site, it could be demonstrated that a lining is not necessary to protect groundwater from chemical and radiological contamination, if groundwater is defined in detail. It certainly seems to be no problem with deep aquifer water, although there may be some problems in some local areas around the ponds in the upper surficial sand layers -- which could probably be corrected.*

"Page 7, 5. By-product Recovery -- a."

Comment: *It is recommended to recover fluosilicic acid from phosphoric acid evaporators. The market is limited for this material, and if too much is recovered, it cannot be sold and will be dumped into the pond. This should be a matter of economic evaluation for the company involved. Plants recovering fluosilicic acid do not have noticeably lower fluoride concentrations in their gypsum pond water than plants that do not recover the material.*

"Page 7, 5. -- b."

Comment: *This again should be a matter of economics for the individual company. Recovery of uranium from the phosphoric acid will have little or no effect on the uranium in any of the waters or solid waste disposal areas of the industry, since the phosphoric acid containing uranium is either shipped from the area or used to produce solid fertilizers, which contain all of the uranium present in the acid.*

"Basis:"

Comment: *The basis that it is economical depends on the situation involved and should not be presented as a fact.*

"II. Existing Sources -- A. Modifications, page 8, first paragraph"

Comment: *Since the areawide EIS can have no direct legal impact on existing sources, these recommendations should be excluded. Federal guidelines promulgated in November 1976 already require existing sources to comply with new source standards and only a compliance schedule is left to be worked out with the State DER.*

It is mentioned that a study to be completed in the next two years will determine the need or lack of need for lining existing gypsum ponds. How existing gypsum ponds could be lined is unknown and there would not appear to be any practical way that this could be done. This statement implies that EPA plans to conduct such a study.

"Page 8, B. Operation and Maintenance"

Comment: We support this recommendation for in-plant inspections, source sampling, and ambient monitoring. We oppose any proposal that the industry pay for this surveillance. The costs should be borne by the DER and EPA.

In summary, we feel that the elimination of the rock drying process at beneficiation plants is not based on technically accurate data, either as to particulate emissions or net energy savings. The latter may actually have a converse effect, with concurrent serious impacts on exports.

We feel that the proposed elimination of above ground slimes disposal areas is an impossible requirement, and we have a specific language proposal on this subject.

The reclamation requirements in the draft scenario may well be counter-productive, and we have draft language proposed.

The proposed new surface water discharge requirements are unattainable, and no evidence cited justifies these values.

We feel that the production of fluosilicic acid and/or uranium are management determinations, based upon economics.

Finally, it is our firm contention that the accumulated evidence produced in the Texas Instruments working papers demonstrates that phosphate mining should be allowed to expand to meet the growing world demand for fertilizer and food, that it would be against the best interests of all the people to deny access to the known Florida deposits, and the Texas Instruments papers further document that this mining can be accomplished within reasonable environmental restrictions which are already in force by various levels of jurisdiction.

Very truly yours,

Homer Hooks

Homer Hooks

HH:jb

cc: Steering Committee
Advisory Committee

florida phosphate council
phosphate feeds you

Suite 24, Executive Plaza
4406 S. Florida Avenue • P.O. Box 5530
Lakeland, Florida 33803
Telephone 813/646-8583

Homer Hooks
President

January 12, 1978

Mr. R. E. McNeill
Project Officer
EPA Region IV
EIS Branch, Phosphate Study Unit
345 Courtland Street
Atlanta, Georgia 20208

Dear Gene:

Subject: Comments on "Draft Summary Outline Scenario to be Recommended by EPA Phosphate Unit"

We submit herewith our comments on the above document mailed by you on December 30, 1977, and received by us on January 4, 1978.

We are struck by the absence of any comment in the draft scenario on the documented and demonstrated social and economic benefits of continued and expanded phosphate mining in Florida. Any options by decision-makers as to expansion or limitation of phosphate mining in Florida must obviously take into account the enormous economic benefits of this industry to Florida, the nation, and the world, and most certainly must recognize the unique impact of this industry in providing fertilizer and food production in the United States and the world. We see no inclusion of this basic consideration in the draft scenario, and we strongly urge that deserved recognition be given to these fundamental factors in the draft environmental impact statement.

Also, we question the legality of prescribing, in the draft scenario and presumably in the EIS, what are, in effect, new surface water quality standards for chemical plants without having gone through the established and required procedures for rule-making and promulgation of standards.

Further, it is our firm contention that the accumulated evidence produced in the Texas Instruments working papers demonstrates that phosphate mining should be allowed to expand in Florida to meet the growing world demand for fertilizer and food, that it would be against the best interests of all the people to deny access to the known Florida deposits, and the Texas Instruments papers further document that this mining can be accomplished within reasonable environmental restrictions which are already in force by various levels of jurisdiction.

Chairman of the Board: Wm. H. Funk, Gardinier, Inc.
Agrico Chemical Company • Borden, Inc. — Chemical Division/Smith-Douglass • Brewster Phosphates (American Cyanamid/Kerr-McGee) • Conserv. Department of Philipp Brothers Division of Englehard Minerals & Chemicals Corp. • Electro-Phos Corporation • Farmland Industries, Inc. • Freeport Chemical Company • Gardinier, Inc. • W. R. Grace & Company, Agricultural Chemicals • International Minerals & Chemical Corporation • Mississippi Chemical Corporation • Mobil Chemical Company • Occidental Chemical Company • Royster Company • Stauffer Chemical Company • Swift Agricultural Chemicals Corporation • T/A Minerals Corporation • USS Agri-Chemicals

Following are specific comments on sections of the draft scenario:

"Page 1, 1. New Sources -- A. Mining and Beneficiation -- Air Quality"

Comment: *Eliminate first sentence and substitute therefor: "Reduce use of the rock drying process whenever technically possible or technically practical." The uses for dry rock specified are too limited. We suggest the following language be added: "or other fertilizer processes requiring dry phosphate rock." For instance, singlesuperphosphate, still a large tonnage product, is omitted.*

The requirement that rock is to be dried at the chemical processing complex, or at existing dryers in Polk County, is unfair to future miners and chemical plant operators and to Polk County, and should be eliminated. The present Clean Air Act requirements and Florida 17-2 rules are very strict and are designed to protect the public and the environment. Any new installation will have to meet these criteria.

"Page 1, Bases: -- i"

Comment: *The 2,000 tons of particulate annually, from dryer stacks, would be about 1,100 tons a year, provided that as much as 20 million tons a year of rock were dried by future mines. Later in the paragraph, 2,000 tons is used as a dryer estimate, which is in error, because this 2,000 tons includes transfer and transportation estimates, and we do not know the basis for this number.*

It is general practice when discussing radioactivity on an annual basis, to present this in terms of curies, which would be 0.042 curies per year for 1,100 tons per year particulate out of stacks. To put this in perspective, this is equivalent to 0.042 grams/yr. of radium-226, a very small quantity.

"Page 2, 2. Surface Water Quality"

Comment: *All operations will have to meet EPA effluent limitations and Florida water quality and EPA water quality standards, whatever they may be.*

"Page 2, 3. Slimes Ponds"

Comment: *Complete elimination of conventional above-ground slimes disposal areas cannot be accomplished with current, proven technology.*

We propose the following wording: Minimize above-ground slimes disposal by utilizing new technology for slimes dewatering. The mining and reclamation plan for New Source Mines should establish a method whereby the slimes (or slimes-tailings mixture) is used for reclamation or some other purpose. The need for an initial above-ground storage area is recognized, as is the need for temporary retaining dikes around disposal areas prior to reclamation.

Also, paragraph (iii) is not clear. Suggest following wording: "Should allow a higher degree of water recirculation than the 85-90% now achievable by releasing additional water normally retained in the slimes." Slimes in conventional settling areas can retain up to 1,000 gallons of water per ton of rock produced. With regard to paragraph (iv), costs of alternative methods of slime disposal can not be forecast with certainty at this time.

"Page 4, 5. Ground Water Quality (i)"

Comment: *This paragraph should be changed to read "The mining plan should allow for maximum utilization of water obtained from dewatering." Incorporating requirements for use of this water in transportation and beneficiation processes in a discussion of connector wells is out of place, since the two are not necessarily related.*

"Page 4, 6. Radiation -- Paragraph 2:"

Comment: *Requires that recommendations published by EPA on March 1 and June 1, 1978, be included in the final EIS. It is our understanding that these will be proposed regulations. A period of time will be allowed for comment, and the final regulations may indeed be different. Other research data to become available may further modify proposed regulations.*

"Page 4, 6. Radiation -- Paragraph 3:"

Comment: *Change to read "Mining and reclamation plans for New Source Mines shall meet future State of Florida and EPA requirements with regard to radiation levels of future reclaimed land." It is premature to specify how this will be accomplished until the final reports of studies now being done are completed and final regulations are promulgated.*

"Page 5, 7. Reclamation (c.)"

Comment: *In this latest draft, your tentative classification of wetlands into four categories has been reduced to three categories.*

Our main objection to this section is that it appears to limit the range of options for wetlands mining and reclamation to a simple set of conditions. The enclosed memo by Mr. Tom Oxford, of Bromwell Engineering, Lakeland, Florida, expounds on this point in some detail.

We are willing to accept the proposed categories as a broad statement of policy. Some wetlands are so valuable that they should not be disturbed; others have such little value that neither preservation nor restoration is required. Between *these two end cases, a variety of situations exist that must be considered on an individual, site-specific basis.*

It should also be recognized that natural reclamation, in some cases assisted by man's efforts, can restore wetland functions and result in high quality habitat for wildlife. Provision for this should be made in any effort to establish criteria for restoring wetlands.

Further study is needed to establish both the value of existing wetlands and the value of various possible types of wetlands reclamation. Ongoing studies, including work for the Florida Phosphate Land Reclamation Study Commission, U. S. Fish and Wildlife Service, and various EIS's for new mining operations will help to provide the needed data.

Until such studies are made, we oppose any effort to establish inflexible criteria for wetlands preservation or reclamation.

"Page 5, B. Chemical Processing — 1. Air Quality"

Comment: *The first sentence should be changed to read "New source performance standards are adequate to protect air quality." Inclusion of the language "if emission limitations are continuously met" is an unwarranted implication of non-compliance in the phosphate industry and has no place in the scenario.*

"Page 6, B. Chemical Processing -- 2. Surface Water Quality"

Comment: *We reject the concept that the EIS can by-pass the normal rule-making procedures of EPA by proposing to implement the proposed "New (areawide EIS)" effluent limitations. These proposed "New (areawide EIS)" effluent limitations should be removed from the scenario.*

There is no scientific basis for the values proposed under the "New (areawide EIS)" values, and this appears to be an attempt at rule-making by fiat. Since existing chemical plants only neutralize and discharge process wastewater a few weeks a year at the most, the improvement in the environment in reducing these values from the current performance standards to the new proposed standards would be negligible. In our opinion, technology does not exist to meet the "New (areawide EIS)" proposed guidelines.

The "New (areawide EIS)" requirements for 30 day averages are less than one-third for phosphorus, and only 40% for fluorides, of existing EPA new source performance standards. Laboratory work done by EPA, in EPA's laboratory in Cincinnati, Ohio, on a number of gypsum pond water samples from this area and other areas of the country, were used to establish the "current (EPA standards of performance for new sources)." Three tables *of laboratory data obtained by EPA in these tests are enclosed. These tables do not show EPA's name, and to the best of our knowledge a formal report was never issued. However, EPA can check with Mr. Elwood Martin of the EPA Guidelines Division in Washington, D. C., to verify that these are, indeed, EPA data. In reviewing the averages of the EPA data, there is a wide variability among the different pond waters, not only with respect to initial analysis, but with respect to final fluorids, phosphorus, and total suspended solids obtained by double liming treatment. None of the averages met the proposed "New (areawide EIS)" requirements for fluorids, phosphorus, or TSS, except for one sample which met it on phosphorus but which is a high chloride sample and not typical of inland chemical plants.*

The draft recommends that "the non-process water system is to be designed for re-circulation with the same design surge capacity as the contaminated process water system," and the same standards for discharge are applicable. The same standards (process wastewater) for discharge now apply to non-process water. This proposal may allow possible discharge of cooling tower and boiler blowdown in cases where this water cannot be discharged to a mining circuit. This requirement may be too restrictive. There are other water sources which need to be discharged that cannot be circulated, such as regeneration streams from water softeners. Data and experience are not available to know whether or not some of this non-process water can be recirculated and re-used without excessive scaling of equipment.

As pointed out before, the State of Florida DER mining effluent guidelines effective October 1, 1977, regulate phosphorus in mining effluent. Adding non-process water to the mining circuit may increase phosphorus levels above the allowable value, in which case this cannot be done.

"Page 7, Basis"

Comment: *It is stated that several chemical complexes converted to complete recirculation of both systems, and that the one new chemical complex constructed since that time does not even have an NPDES permit, because it is designed for complete recirculation of process and non-process water, with a portion of the non-process water blended with the mining circuit. This statement is not correct. The plant that does not have an NPDES permit discharges their non-process water to the mine circuit. A few other plants in the area which were believed by EPA to have complete circulation of non-process water, have in fact continuous discharges of non-process water. Therefore, there are no chemical complexes in Florida that have complete recirculation of non-process water. This will involve a new technology, and experience is not available at this time to determine how it will work. We do not know* of any information that shows that these proposed recirculation systems would result in a net reduction of costs, because of savings of product and the reduced need for pumping water from the aquifer. Product savings would not result and the cost of the extra equipment and power required for pumping to recirculate this water would increase costs.

The last paragraph at the bottom of page 7 relating to the EPA Development Document in July 1971, is out of date and was superseded by the attached laboratory tests conducted by EPA.

"Page 8, 3. Ground Water Quality"

Comment: This entire section should be removed from the scenario.

Existing data do not support the necessity to line gypsum ponds with an impervious material. Additional studies are being made in cooperation with the Florida DER and, until these are completed, there is no basis for this requirement.

It may be, at a specific site, that it could be demonstrated that a lining is necessary to protect groundwater; however, this is not the case at the present time.

"Page 8, 5. By-Product Recovery -- a."

Comment: This entire section requiring fluosilicic acid recovery should be removed from the scenario. It is unrealistic to require a company to increase its operating costs to recover a product for which there is a limited market. If this material cannot be sold, it will be dumped into the gypsum pond, thereby wasting valuable economic resources -- capital and operating costs.

"Page 8, 5. By-Product Recovery -- b"

Comment: This entire section requiring uranium recovery from phosphoric acid should be removed from the scenario. It is unrealistic to require a company to invest substantial capital and incur increased operating costs unless it is assured of a reasonable return on investment. This should be a management decision and has no place in the scenario.

"Page 8, 5. By-Product Recovery -- Basis"

Comment: Plants recovering fluosilicic acid do not have noticeably lower fluoride concentrations in their gypsum pond water than plants that do not recover the material. Phosphoric acid containing uranium is either shipped from the area or used to produce fertilizers, which contain all the uranium present in the acid.

"Page 8, II. Existing Sources, A. Modification"

Comment: Since the area-wide EIS can have no direct legal impact on existing sources, these recommendations should be excluded.

The Federal Guidelines promulgated in November 1976, already require existing sources to comply with new source standards, and only a compliance schedule is left to be worked out with the State DER.

It is mentioned that a study to be completed within the next two years will determine the need or lack of need for lining existing gypsum ponds. How existing gypsum ponds could be lined is unknown and there would not appear to be any practical way that this could be done. This statement implies that EPA plans to conduct such a study.

"Page 9, B. Operation & Maintenance"

Comment: *We support this recommendation for in-plant inspections, source sampling, and ambient monitoring. We oppose any proposal that industry pay for this surveillance. The cost should be borne by the Florida DER and EPA.*

We would like to point out that chemical plants have been performing maintenance on scrubbing equipment since they have been installed, and that this did not start just because of inspections by the DER in October-November 1977. This language should be re-written since it is very misleading.

Very truly yours,

Homer Hooks

HH:jb

Enclosures

cc: Steering Committee
Advisory Committee

MEMORANDUM

TO: EPA/EIS File

PREPARED BY: T. P. Oxford

REVISED: L. G. Bromwell

SUBJECT: Proposed Categories for Wetlands Classification

The four wetland categories proposed by the EPA are inadequate to describe the situations encountered in phosphate mining and land reclamation. The four categories are a subset of a more comprehensive set of circumstances, as described in some detail below.

Note that each of the EPA's categories, with a certain degree of imprecision, follows a particular format; viz., present land use, future land use. The present use of lands in categories 1 and 2 is to "serve important functions", tacitly assumed to be those functions that are commonly ascribed to wetlands. The future use in category 1 is precisely the same as the present use since lands in this category are not permitted to change. The future use in category 2 is "similar" to the present use and disruption is permitted.

An example of circumstances that would distinguish between categories 1 and 2 would be, on the one hand, the very specific case of a wetland parcel performing the particular identifiable function of purification of agricultural runoff water in which case removal of the vegetation would cause immediate and relatively long-term detrimental effects on downstream waters; on the other hand, a like area of similar size and quality might be so located as to possess importance only as a member of the regional pool of wetland acreage. This suggests that location, at least insofar as it relates to function, is deserving of consideration.

Categories 3 and 4 have similar present uses, namely, "less important". The matter of "importance" is at once crucial and nebulous. In this instance it is not clear whether lands in these categories are less important because they perform important functions less well (than category 1 and 2 lands) or because they perform only less important functions, or perhaps a narrower range of functions. The distinction may bear significance. A clue is provided (unconsciously it seems) in the comparative wording of the category 2 and 3 descriptions. The less important wetlands of category 3 may be replaced with land of completely different wetland type, suggesting a link between importance and type and implying that no such approach is valid for category 2 lands. Thus, where a particular important function is served, restoration of similar function requires restoration of similar type. Possibly this notion is only inadvertantly expressed. It is, in any case, a debatable idea.

Finally, the category 4 wetlands are less important to the extent that they may presumably have zero value...unless, of course, some non-zero worth is assigned to all wetlands by definition. This category is but one of the many that appear in figure 1.

The figure illustrates the most reasonable pairings of present uses and future actions as well as indicating some pairings that are only marginally likely. Present uses in terms of wetland function are graded as (A) important, but with value deriving largely from location, (B) important, in the sense of being vigorous and contributory, but not necessarily irreplaceable, and (C,D,E) less important or unimportant. Action options include (1) no disruption; (2,3), restoration of site to same or alternative type wetland; (4,5) site restoration not considered and equivalent acreage elsewhere may or may not be considered.

In figure 1, blank squares are those that are not logically consistent or, even if so, must be excluded as a practical matter. Pairs indicated by "X" are those that are possible, but not highly likely circumstances. Pairs indicated by "*" are the categories that it is entirely reasonable to expect. Numbered entries refer to the corresponding EPA categories.

EPA.category 1 seems to correspond to case A1. Cases B1 and C1 are less likely to occur, but the situation can be imagined in which very localized function, even if small ("less important", case C1), dictates that consideration be given to preservation. The unlikely case B1 might occur where the extent of land involved was so great that temporary disturbance would disrupt even the general contributory function.

Case B2 may be that which EPA had in mind for category 2. Here the suggestion that important function can be restored only by like-type wetland is implicit. If that is so, then the indicated case B3 is unlikely, if not impossible. However, if function is not site-specific, then case B4 in which equivalent wetland acreage is created elsewhere is, in fact, a circumstance that is very reasonable.

The supposed connection between function and wetland type pervades cases A2, B2, C2, and D2 making them very likely, while making cases A3, B3, and C3 less so. Case C4, however, appears

WETLAND FUNCTION PERFORMED IS

ACTION TAKEN IS	(A) Important and (site) specific	(B) Important and general	(C) Less important, but specific	(D) Less important and general	(E) No evident function
(1) Disruption represents unacceptable adverse impact NO COMPROMISE	*[1]	X	X		
(2) Restoration of like-type W/L at site	*	*[2]	*	*	
(3) Restoration of alternative type W/L at site	X	X	X	*[3]	*
(4) Restoration to other land-use but with equivalent W/L acreage created elsewhere		*		*	
(5) Restoration to other land-use				*	*[4]

* Cases Reasonably Included

X Perhaps Unreasonable

*[1] EPA Categories

FIGURE 1

to be identical to EPA category 3. Thus where function is less important and not specific to the site, an alternative wetland type would be acceptable. Similarly, though not recognized in the EPA proposal, an alternative site would be acceptable, the situation represented by case D4. Further, depending upon degree of importance, a non-wetland land use might be contemplated as in case D5.

Case D5 or E5 is EPA category 4 in which wetland value is insufficient to warrant restoration as wetland. However, even when no present wetland function exists, there may be a need to create wetlands at a particular site of disturbance. A common example would be an area that previously was marshland and was drained long before mining for agricultural use. Such a situation would be included in case E3.

The position frequently taken by environmentalists is that if an area is declared a wetland, it then must perform certain vital functions, and in consequence it must not be disturbed. The only rational counter-proposal is to require that wetland areas be evaluated on an individual basis. The EPA proposal, modified to be suitably comprehensive, provides the grounds for site-specific evaluation. By comparison, any approach using acreages and water flow criteria appears to be inflexible and therefore counter-productive.

se

TABLE I

1 of 3
6/27/75

RESULTS OF TREATABILITY JAR TESTS

PHOSPHATE FERTILIZER INDUSTRY WASTEWATER SAMPLES

Company Name	pH raw	pH 1st stage start	pH 1st stage end	pH 2nd stage start	pH 2nd stage end	ml/1 10% lime slurry 1st stage (mix time - min)	ml/1 10% lime slurry 2nd stage (mix time - min)	Settling time - hrs 1st stage	Settling time - hrs 2nd stage	Fluoride - mg/1 raw	Fluoride - mg/1 final	Phosphorus - mg/1 raw	Phosphorus - mg/1 final	S. Solids - mg/1 raw	S. Solids - mg/1 final	Sulfate-mg/1 raw	Sulfate-mg/1 final
Farmland	2.3	3.3	3.2					1		3,000	70	4,650	1,800	9	42	3,700	
	*2.4	3.6	3.7			60 (6)		6		3,000	32	4,650	2,100	9	⑮	3,700	
	*2.4	3.6	3.6			60 (6)		12		3,000	31	4,650	2,250	9	⑪	3,700	
	*2.4	3.6	3.7			60 (6)		24		3,000	31	4,650	2,250	9	⑥	3,700	
	2.3	3.3	3.2	6.7	6.7			1	2	3,000		4,650	156	9	300	3,700	
	2.3	3.3	3.2	8.5	8.5			1	3	3,000	⑥	4,650	⑳	9	60	3,700	
	**2.3	3.5	3.0	8.8	8.2	25 (1)	60 (9)	24	12	3,000	22	4,650	⑥	9	④	3,700	
	**2.3	3.5	3.0	8.6	8.2	25 (1)	60 (9)	24	24	3,000 14.6 AV	20	4,650	⑭	9	①	3,700	
	**2.3	3.5	3.0	8.6	8.5	25 (1)	60 (9)	24	48	3,000	19	4,650 13.5 AV.	③	9 [illegible] AV.	④	3,700	
	***1.9	5.2	5.1	8.3		60 (6)	20 (<1)	24	96	3,000	⑤	4,650	⑥	9	⑧	3,700	
	***1.9	7.1	6.0	8.3		90 (7)	2 (<1)	24	72	3,000	16	4,650	2.4 [illegible]	9	80	3,700	
Borden	2.3	3.8	3.4					1		10,400	750	7,200	4,000	39	86	6,400	
	*1.7	3.6	3.5			135 (7)		6		10,400	54	7,200	4,050	39	30	6,400	
	*1.7	3.6	3.5			135 (7)		12		10,400	52	7,200	3,000	39	20	6,400	
	*1.7	3.6	3.6			135 (7)		24		10,400	53	7,200	4,500	39	㉒	6,400	
	2.3	3.3	3.4	6.6	7.5			1	2	10,400	90	7,200	1,400	39	2,700	6,400	
	2.3	3.3	3.4	8.1	9.2			1	2	10,400		7,200	780	39		6,400	
	**2.2	3.5	3.3	8.5	8.9	90 (10)	110 (11)	24	12	10,400	42	7,200	900	39	1,020	6,400	
	**2.2	3.5	3.3	8.5	8.9	90 (10)	110 (11)	24	24	10,400	35	7,200	960 697 AV.	39	330	6,400	
	**2.2	3.5	3.3	8.5	9.2	90 (10)	110 (11)	24	48	10,400 32.8 AV	37	7,200	1,050	39 289 AV	68	6,400	
	***1.8	5.1	5.1	8.3		120 (8)	30 (3)	24	96	10,400	⑩	7,200	372	39	20 [illegible]	6,400	
	***2.0	7.2	7.0	8.6		170 (9)	4 (6)	24	72	10,400	39	7,200	213	39	9 [illegible]	6,400	
Gardinier	2.1	3.3	3.3					1		5,400	500	3,600	2,400	50	60	3,400	
	*1.6	3.5	3.4			75 (5)		6		5,400	56	3,600	2,330	50	35	3,100	
	*1.6	3.5	3.4			75 (5)		12		5,400	52	3,600	2,550	50	26	3,400	
	*1.6	3.5	3.4			75 (5)		24		5,400	54	3,600	2,850	50	20 [illegible]	3,400	
	2.1	3.3	3.3	6.2	6.3			1	2	5,400	22	3,600	129 120	50	52 1,500	3,400	
	**2.0	3.5	3.1	8.5	9.4	40 (2)	90 (6)	24	12	5,400	34	3,600	①.5	50	6 ⑥	3,400	
	**2.0	3.5	3.1	8.5	9.5	40 (2)	90 (6)	24	24	5,400	39	3,600	①.5	50	5 ⑤	3,400	
	**2.0	3.5	3.1	8.5	9.4	40 (2)	90 (6)	24	48	5,400 27.8	30	3,600 2.6	①	50 352	2 ②	3,400	
	***1.6	4.8	4.6	8.5		100 (9)	35 (3)	24	96	5,400 AV.	⑤	3,600 AV.	③	50 AV	1,740	3,400	
	***1.9	7.0	7.7	8.9		150 (4)	0.5(<1)	24	72	5,400	31	3,600	①	50	9 ⑨	3,400	

NOTE: Circled numbers denote concentrations equal to or less than limits promulgated 4/8/74.

3-82 ✓

2 of 3
6/27/75

TABLE 1 (cont.)

RESULTS OF TREATABILITY JAR TESTS

PHOSPHATE FERTILIZER INDUSTRY WASTEWATER SAMPLES

pany e	pH raw	pH 1st stage start	 end	pH 2nd stage start	 end	ml/1 10% lime slurry 1st stage (mix time - min)	 2nd stage	Settling time - hrs 1st stage	 2nd stage	Fluoride - mg/1 raw	 final	Phosphorus - mg/1 raw	 final	S. Solids - mg/1 raw	 final	Sulfate-mg/1 raw	 final
Oxy	2.4	3.4	3.4					1		4,700	400	6,900		43	35	4,280	
	•1.7	3.5	3.4			95 (4)		6		4,700	76	6,900	4,650	43	8 ⑧	4,280	
	•1.7	3.5	3.5			95 (4)		12		4,700	76	6,900	5,025	43	3 ③	4,280	
	•1.7	3.5	3.5			95 (4)		24		4,700	70	6,900	5,100	43	3 ③	4,280	
	2.4	3.4	3.4	6.4	7.1			1	2	4,700	26	6,900	378	43	1,380	4,280	
	2.4	3.4	3.4	7.5	9.1			1	2	4,700		6,900	⑥	43		4,280	
	••2.2	3.5	3.4	8.6	8.2	60 (8)	100 (8)	24	12	4,700	30	6,900	225 225	43	1,040	4,280	
	••2.2	3.5	3.4	8.6	8.2	60 (8)	100 (8)	24	24	4,700	40	6,900	189 136	43	830	4,280	
	••2.2	3.5	3.4	8.6	8.4	60 (8)	100 (8)	24	48	4,700	33.2 36	6,900	130 AV	43	531 540	4,280	
	•••1.8	4.8	4.7	8.3		100 (15)	35 (8)	24	96	4,700	AV ⑥	6,900	126	43	AV ⑨	4,280	
	•••2.0	7.1	6.5	8.6		160 (6)	3 (5)	24	72	4,700	29	6,900	㉔	43	100	4,280	
Conserv	2.2	3.2	3.3					1		7,400	100	6,700	3,300	18	160	5,450	
	•1.5	3.6	3.4			115 (4)		6		7,400	40	5,700	4,400	18	132	5,450	
	•1.5	3.6	3.5			115 (4)		12		7,400	36	5,700	3,600	18	88	5,450	
	•1.5	3.6	3.6			115 (4)		24		7,400	37	5,700	2,700	18	64	5,450	
	2.2	3.2	3.3	6.7	6.7			1	2	7,400		5,700	216	18		5,450	
	2.2	3.2	3.3	8.4	8.5			1	2	7,400	7 ⑦	5,700	34 ㉞	18	26 26	5,450	
	••2.0	3.5	3.5	8.5	8.2	90 (6)	60 (6)	24	12	7,400	8 ⑧	5,700	28 ㉘	18	9 ⑨	5,450	
	••2.0	3.5	3.5	8.5	8.6	90 (6)	60 (6)	24	24	7,400	8 ⑧ 11.6	5,700	30 ㉚ 22	18	13.7 2 ②	5,450	
	•••1.7	4.8	4.7	8.5		110 (9)	34 (5)	24	96	7,400	4 ④ AV	5,700	⑨ AV	18	AV 170	5,450	
	•••1.9	7.2	6.5	8.5		165 (4)	3 (4)	24	72	7,400	29	5,700	⑨	18	480	5,450	
Agrico	2.0	3.3	3.2					1		10,200	110	10,000	3,800	48	137	4,050	
	•1.4	3.5	3.4			230 (6)		6		10,200	55	10,000	5,550	48	14 ⑭	4,950	
	•1.4	3.5	3.5			230 (6)		12		10,200	50	10,000	6,000	48	16 ⑯	4,950	
	•1.4	3.5	3.6			230 (6)		24		10,200	53	10,000	4,650	48	18 ⑱	4,950	
	2.0	3.3	3.2	5.1	6.7			1	2	10,200	⑪	10,000	660	48	4,230	4,950	
	••2.0	3.5	3.2	8.5	8.7	150 (10)	120 (7)	24	12	10,200	55	10,000	276	48	209	4,050	
	••2.0	3.5	3.2	8.5	8.9	150 (10)	120 (7)	24	24	10,200	41	10,000	199 276	48	1,670	4,950	
	••2.0	3.5	3.2	8.5	9.2	150 (10)	120 (7)	24	48	10,200	34 36	10,000	AV. 245	48	514 200	4,050	
	•••1.0	4.9	4.6	8.4		200 (13)	41 (8)	24	06	10,200	AV ⑦	10,000	180	48	12 ⑫	4,950	
	•••1.7	7.6	6.9	8.6		260 (11)	3 (4)	24	72	10,200	29	10,000	⑱	48	490	4,950	

3-83

NOTE: Circled numbers denote concentrations equal to or less than limits promulgated 4/8/74.

3 of 3
6/27/75

TABLE 1 (cont.)

RESULTS OF TREATABILITY JAR TESTS

PHOSPHATE FERTILIZER INDUSTRY WASTEWATER SAMPLES

mpany me	pH raw	pH 1st stage start	pH 1st stage end	pH 2nd stage start	pH 2nd stage end	ml/1 10% lime slurry 1st stage (mix time - min)	ml/1 10% lime slurry 2nd stage (mix time - min)	Settling time - hrs 1st stage	Settling time - hrs 2nd stage	Fluoride - mg/1 raw	Fluoride - mg/1 final	Phosphorus - mg/1 raw	Phosphorus - mg/1 final	S. Solids - mg/1 raw	S. Solids - mg/1 final	Sulfate-mg/1 raw	Sulfate-mg/1 final
Allied	1.9	3.3	3.2					1		11,600	110	8,400	3,800	4	137	15,785	
	•1.8	3.5	3.2			200 (5)		6		11,600	106	8,400	4,200	4	43	15,785	
	•1.8	3.5	3.4			200 (5)		12		11,600	100	8,400	4,350	4	36	15,795	
	•1.8	3.5	3.4			200 (5)		24		11,600	102	8,400	6,000	4	⑭	15,785	
	1.9	3.3	3.2	6.2	8.8			1	2	11,600	16	8,400	600	4	4,150	15,785	
	••1.7	3.5	3.2	8.6	9.1	190 (8)	140 (12)	24	12	11,600	58	8,400	186	4	1,920	15,785	
	••1.7	3.5	3.2	8.6	9.5	190 (8)	140 (12)	24	24	11,600	40	8,400	144	4	1,540	15,785	
	••1.7	3.5	3.2	8.6	9.6	190 (8)	140 (12)	24	48	11,600	31 33 AV.	8,400 155 AV.	90 [illegible]	4	680	15,785	
	•••1.2	4.9	4.7	8.4		270 (11)	37 (6)	24	96	11,600	6 ⑥	8,400	㉚ 30	4 678 AV.	110	15,795	
	•••1.3	7.3	7.1	8.7		360 (9)	1 (2)	24	72	11,600	28	8,400	324	4	40	15,785	
Freeport	•2.3	3.5	3.0			40 (5)		6		3,100	180	1,380	1,200	< 1	36	2,450	
	•2.3	3.5	3.2			40 (5)		12		3,100	177	1,380	1,050	< 1	25 ㉕	2,450	
	•2.3	3.5	3.2			40 (5)		24		3,100	192	1,380	1,200	< 1	11 ⑪	2,450	
	••2.5	3.5	3.2	8.5	8.9	30 (7)	30 (4)	24	12	3,100	105	1,380	156	< 1	160	2,450	
	••2.5	3.5	3.2	8.5	9.0	30 (7)	30 (4)	24	24	3,100	105 77	1,380 114	154	< 1	110	2,450	
	••2.5	3.5	3.2	8.5	9.4	30 (7)	30 (4)	24	48	3,100	105 AV.	1,380 AV.	153	< 1 340	132	2,450	
	•••2.3	5.2	5.3	8.4		40 (5)	12 (3)	24	96	3,100	18	1,380	99	< 1 AV.	1,180	2,450	
	•••2.2	7.1	7.5	8.6		110 (9)	2 (4)	24	72	3,100	54	1,380	6 ⑥	< 1	120	2,450	
Olin	•2.2	3.5	3.2			30 (5)		6		1,700	234	6,000	5,400	121	72	3,540	
	•2.2	3.5	3.4			30 (5)		12		1,700	168	6,000	5,100	121	42	3,540	
	•2.2	3.5	3.4			30 (5)		24		1,700	210	6,000	4,650	121	25 ㉕	3,540	
	••2.3	3.5	3.5	8.5	8.3	25 (3)	90 (7)	24	12	1,700	31	6,000	306	121	21 ㉑	3,340	
	••2.3	3.5	3.5	8.5	8.5	25 (3)	90 (7)	24	24	1,700	33	6,000	318	121	12 ⑫	3,540	
	••2.3	3.5	3.5	8.5	8.4	25 (3)	90 (7)	24	48	1,700	35 33	6,000 296	290	121 5.1	5 ⑤	3,540	
	•••2.1	5.0	4.7	8.5		60 (4)	41 (9)	24	96	1,700	6 ⑥ AV	6,000 AV	390	121 AV.	232	3,540	
	•••2.1	7.1	7.8	8.6		120 (7)	3 (3)	24	72	1,700	61	6,000	273	121	㉔	3,540	

NOTE: Circled numbers denote concentrations equal to or less than limits promulgated 4/8/74.

- * 1st stage analyses on top 33 cm in 2000 ml graduate.
- ** 1st stage liming of 2000 ml raw wastewater; 2nd stage liming of top 33 cm of 1st stage; 2nd stage analyses on top 9 cm of mixture.
- *** 1st stage liming of 2000 ml raw wastewater; 2nd stage liming of top 1000 ml of 1st stage; 2nd stage analyses on top half of mixture.

florida phosphate council
phosphate feeds you

Suite 24, Executive Plaza
4406 S. Florida Avenue • P.O. Box [illegible]
Lakeland, Florida 33803
Telephone 813/646-8583

Homer Hooks
President

February 9, 1978

Mr. R. E. McNeill
Project Officer
EPA, Region IV
EIS Branch, Phosphate Study Unit
345 Courtland Street
Atlanta, Georgia 20208

Dear Gene:

Subject: Central Florida Phosphate EIS - Your Memorandum of February 2, 1978 and Attached Recommended Scenario

On Tuesday, January 31, 1978, the Florida Phosphate Council, Inc., participated in a meeting held by EPA in Tampa for purposes of discussing the Recommended Scenario with the Advisory and Steering Committees. In addition to the discussion during the meeting, we submitted written comments for the record. A copy of these comments is attached hereto as Exhibit A for your convenience.

The Recommended Scenario attached to your February 2, 1978 memorandum reflects some modifications, but does not recognize the basic objections submitted by the Florida Phosphate Council, Inc. on January 31, 1978. Thus, we hereby reaffirm the comments contained in Exhibit A and resubmit them for your consideration. In addition, we have the following comments on the areas modified after the Advisory/Steering Committee meeting (as outlined in your February 2, 1978 memorandum):

1. Wetlands Description

As noted on January 31, we object to the preclusion of mining on any categorical basis (i.e., in "category one" wetlands). Although the areawide EIS may discuss policies or general findings, restrictions on site-specific activities should not be proposed until EPA, the Corps, the Fish and Wildlife Service and other agencies have been consulted regarding detailed plans for development and restoration submitted by the applicant. Until such information is available, the review contemplated by applicable Corps of Engineers regulations (33 CFR §302.4) and EPA regulations (40 CFR part 230) cannot be properly completed.

Chairman of the Board Wm H. Funk Gardinier, Inc.
Agrico Chemical Company • Borden, Inc. — Chemical Division/Smith-Douglass • Brewster Phosphates (American Cyanamid/Kerr-McGee) • Conserv Department of Philipp Brothers Division of Englehard Minerals & Chemicals Corp. • Electro-Phos Corporation • Farmland Industries, Inc. • Freeport Chemical Company • Gardinier, Inc. • W. R. Grace & Company, Agricultural Chemicals • International Minerals & Chemical Corporation • Mississippi Chemical Corporation • Mobil Chemical Company • Occidental Chemical Company • Royster Company • Stauffer Chemical Company • Swift Agricultural Chemicals Corporation • T/A Minerals Corporation • USS Agri-Chemicals

2. Surface Water Quality

A second area discussed on January 31 and summarized in your February 2, 1978 memorandum is the proposed set of effluent limitations for new source chemical plants. These concentrations do not reflect technology available in 1978, and there is no scientific basis given for the specific values proposed or for the necessity of more stringent limitations in the Tampa Bay and Peace River Basins. Furthermore, as discussed on January 31, we consider the proposal of more stringent effluent limitations in the scenario to be in conflict with Section 511(c)(2) of the Federal Water Pollution Control Act Amendments of 1972.

3. Above Ground Slimes Disposal Areas

We suggest the following wording on page 3 of the scenario under Bases, iv): Current research, and one full scale operation, indicate that two of the new technology methods may result in costs approximately the same as conventional slimes disposal. However, there is no firm evidence or data from full-scale plant operations that would confirm any reduction in costs to be anticipated by the use of new technology.

4. Ground Water Quality

The third area discussed on January 31 is the lining of gyp ponds. Your memorandum indicates that no changes in the scenario will be made, however. Thus, we have no further comment at this time, but reconfirm the objections stated in Exhibit A hereto.

5. By Product Recovery

This area was discussed in detail on January 31 and new scenario wording is proposed in your memorandum. This entire section should be eliminated, however. By-product recovery requires substantial investment of capital, and whether recovery is economically viable or not, such a decision should be left to the Industry, and not be made by EPA.

The alternate requirement that "estimated fluorine emissions from new source gyp ponds should not exceed the total allowable point source fluorine emissions within the plant complex if a permit is to be issued" is arbitrary and capricious. No scientific basis is given for this fluoride emission requirement, which is a welfare pollutant and not a primary health pollutant. Further, there is no known scientifically correct method available for predicting fluoride emissions from gyp ponds. This alternative should be removed from the scenario because it makes recovery of fluoride compounds from phosphoric acid evaporators mandatory.

The other areas mentioned in your memorandum of February 2, 1978 should be viewed in light of the objections and comments submitted by the Florida Phosphate Council on January 31, 1978 (Exhibit A hereto). The comments outlined above are supplemental to comments previously submitted by the Council and we strongly encourage EPA to make appropriate revisions in the scenario before the draft EIS is prepared.

Sincerely,

Homer Hooks

HH:jb

Enclosure

cc: Steering Committee
Advisory Committee

florida phosphate council
phosphate feeds you

Homer Hooks
President

EXHIBIT A

Suite 24, Executive Plaza
4406 S. Florida Avenue • P.O. Box 5530
Lakeland, Florida 33803
Telephone 813/646-8583

January 30, 1978

Mr. R. E. McNeill
Project Officer
EPA Region IV
EIS Branch, Phosphate Study Unit
345 Courtland Street
Atlanta, Georgia 20208

Dear Gene:

Subject: Comments on "Draft Summary Outline Scenario, dated January 24, 1978, to be Recommended by EPA Phosphate Unit:

We submit herewith our comments on the above document, received by us on January 26, 1978.

We reiterate the comments made on the first page of our letter of January 12, 1978, dealing with (1) absence of any comment on the social and economic benefits of continued and expanded phosphate mining in Florida, (2) the question of whether the EIS can legally promulgate standards in the absence of prescribed rule making procedure, and (3) our firm contention that accumulated evidence of all work done by the contractor, Texas Instruments, demonstrates that phosphate mining should be allowing to expand in Florida in order to meet growing U. S. and world demand for agriculture products produced by phosphate fertilizer.

"Page 1, 1. New Sources --A. Mining and Beneficiation -- 1. Air Quality

Comment: Eliminate first sentence and substitute therefor: "Reduce use of the rock drying process whenever technically possible or technically practical."

The requirement that rock "is to be dried at the chemical processing complex, or at dryers permitted by DER priot to publication of the Draft EIS" is unfair to future miners and chemical plant operators and to Polk County, since that is where all the present dryers are located. This requirement should be removed from the scenario.

The present Clean Air Act requirements and Florida 17-2 rules are very strict and are designed to protect the

Chairman of the Board: Wm. H. Funk, Gardinier, Inc.
Agrico Chemical Company • Borden, Inc. — Chemical Division/Smith-Douglass • Brewster Phosphates (American Cyanamid/Kerr-McGee) • Conserv Department of Philipp Brothers Division of Englehard Minerals & Chemicals Corp. • Electro-Phos Corporation • Farmland Industries, Inc. • Freeport Chemical Company • Gardinier, Inc. • W. R. Grace & Company, Agricultural Chemicals • International Minerals & Chemical Corporation • Mississippi Chemical Corporation • Mobil Chemical Company • Occidental Chemical Company • Royster Company • Stauffer Chemical Company • Swift Agricultural Chemicals Corporation • T/A Minerals Corporation • USS Agri-Chemicals

the public and the environment. Any new installation will have to meet these criteria. This statement should be included in the scenario to correctly inform the public.

"Page 1, Bases: -- 1"

Comment: Since you have brought up the radioactivity of power plants which emit krypton-85 and iodine-131, why have you neglected to inform the public about the radium-226 and radium-228 emitted from the stacks of coal burning power plants, especially since these are in the Central Florida area? It has been estimated that a 1,000 Mw(E) coal burning power plant will discharge into the atmosphere between 28 millicuries and one (1) curie per year of radium-226 and radium-228. This is 2.8 x 10^{10} to 1 x 10^{12} picocuries, or more than the phosphate rock dryers cited. (Ref.: Guimond, R. J., "The Radiological Implications of Increased Coal Utilization")

It is general practice when discussing radioactivity on an annual basis, to present this in terms of curies, which would be 0.042 curies per year for 1,100 tons per year particulate out of stacks. To put this in perspective, this is equivalent to 0.042 grams/yr. of radium-226, a very small quantity and is probably less than a 1,000 Mw(E) power plant burning coal.

The statement "Additional particulate, with a proportionate quantity of radionuclide emissions, would also be prevented due to transfer and transportation of wet unground rock instead of dry rock" is a non-quantitative statement and presumably refers to fugitive dust which would mostly fall in the plant area." Unless this can be quantified and put into proper perspective, this statement should be removed from the scenario.

"Page 2, 2. Surface Water Quality"

Comment: This statement should be added in order to inform the general public: "All operations will have to meet EPA effluent limitations and Florida water quality and EPA water quality standards, whatever they may be."

"Page 3, 3. Eliminate conventional above ground slimes -- Bases: (IV)"

The costs for alternative methods of slimes disposal are not known at the present, and will not be known until further full-scale testing is conducted. The available cost data are insufficient to conclude that the alternative methods will be lower or even approximately the same as conventional slimes disposal.

"Page 4, 6. Radiation -- Paragraph 2"

Comment: The statement "Proposed regulations regarding radiation levels in structures ----" is incorrect. EPA intends to offer proposed recommendations which have no legal authority and cannot be enforced by EPA. These must be adopted by state, county, or other regulatory authorities before they become regulations and legally binding. This was told to representatives of the Florida Phosphate Council by Dr. William Mills of the Office of Radiation Guidelines in a Washington, D. C. meeting on January 24, 1978.

The language should be changed to eliminate the word regulations and substitute the word recommendations.

"Page 5. 6. Radiation -- Paragraph 3"

Comment: Change to read "Mining and reclamation plans for New Source Mines shall meet future State of Florida and/or local regulatory body requirements with regard to radiation levels of future reclaimed land." It is premature to specify how this will be accomplished until the final reports of studies now being done are completed and final regulations are promulgated.

"Page 5. 7(c) Reclamation -- Wetlands"

Comment: The program EIS should serve as a statement of policy and priorities for various types of wetland protection. The balancing of costs and benefits should be conducted during the site specific EIS so that a program most beneficial to the overall public interest may be developed.

"Page 6. B. Chemical Processing -- 1. Air Quality"

Comment: The first sentence should be changed to read "New source performance standards are adequate to protect air quality." Inclusion of the language "if emission limitations are continuously met" is an unwarranted implication of non-compliance by the phosphate industry, reflects on the credibility of the scenario, and has no place in the scenario.

"Page 6. B. Chemical Processing -- 2. Surface Water Quality"

Comment: We reject the concept that the EIS can by-pass the normal rulemaking procedures of EPA by proposing to implement the proposed "Areawide EIS" effluent limitations. These proposed "Areawide EIS" effluent limitations should be removed from the scenario.

There is no scientific basis for the values proposed under the "Areawide EIS" values, and this is an attempt at rule-making by fiat.

Since existing chemical plants only neutralize and discharge process wastewater a few weeks a year at the most, the improvement in the environment in reducing these values from the current performance standards to the new proposed standards would be negligible. In our opinion, technology does not exist to meet the "Areawide EIS" proposed guidelines.

The "Areawide EIS" requirements for 30 day averages are less than one-third for phosphorus, and only 40% for fluorides, of existing EPA new source performance standards. Laboratory work done by EPA, in EPA's laboratory in Cincinnati, Ohio, on a number of gypsum pond water samples from this area and other areas of the country, were used to establish the current "EPA Standards of Performance for New Sources."

Three tables of laboratory data obtained by EPA in these tests were sent to you previously. These tables do not show EPA's name, and to the best of our knowledge a formal report was never issued. However, EPA can check with Mr. Elwood Martin of the EPA Guidelines Division in Washington, D. C., to verify that these are, indeed, EPA data. In reviewing the averages of the EPA data, there is a wide variability among the different pond waters, not only with respect to initial analysis, but with respect to final fluoride, phosphorus, and total suspended solids obtained by double liming treatment. None of the averages met the proposed "Areawide EIS" requirements for fluoride, phosphorus, or TSS, except for one sample which met it on phosphorus but which is a high chloride sample and not typical of inland chemical plants.

The draft recommends that "the non-process water system is to be designed for recirculation with the same design surge capacity as the contaminated process water system," and the same standards for discharge are applicable. The same standards (process wastewater) for discharge now apply to non-process water. This proposal may allow possible discharge of cooling tower and boiler blowdown in cases where this water cannot be discharged to a mining circuit. This requirement may be too restrictive. There are other water sources which need to be discharged that cannot be circulated, such as regeneration streams from water softeners. Data and experience are not available to know whether or not some of this non-process water can be recirculated and re-used without excessive scaling of equipment.

As pointed out before, the State of Florida DER mining effluent guidelines effective October 1, 1977, regulate phosphorus in mining effluent. Adding non-process water to the mining circuit may increase phosphorus levels above the allowable value, in which case this cannot be done.

The statement "The above limitations do not preempt EPA National Effluent Guidelines, but are based on protection of water quality in the Tampa Bay and Peace Basins" is erroneous since the limitations do pre-empt EPA National Effluent Guidelines. No facts are given for the basis and it is purely an unsubstantiated opinion. This sentence (in quotes above) should be removed from the scenario since it is not credible.

"Page 7, 8 Basis"

Comment: It is stated that several chemical complexes converted to complete recirculation of both systems, and that the one new chemical complex constructed since that time does not even have an NPDES permit, because it is designed for complete recirculation of process and non-process water, with a portion of the non-process water blended with the mining circuit. This statement is not true.

The plant that does not have an NPDES permit discharges their non-process water to the mine circuit. A few other plants in the area which were believed by EPA to have complete circulation of non-process water, have in fact continuous discharges of non-process water. Therefore, there are no chemical complexes in Florida that have complete recirculation of non-process water. This will involve a new technology, and experience is not available at this time to determine how it will work. We do not know of any information that shows that these proposed recirculation systems would result in a net reduction of costs, because of savings of product and the reduced need for pumping water from the aquifer. Product savings would not result and the cost of the extra equipment and power required for pumping to recirculate this water would increase costs.

The last paragraph at the bottom of page 8 relating to the EPA Development Document of July 1971, is out of date and was superseded by the laboratory tests conducted by EPA. We do not know of any system designed in the last 10 years that would meet the proposed "Areawide EIS" values.

"Page 8, 3. Ground Water Quality"

Comment: This entire section should be removed from the scenario.

Existing data do not support the necessity to line gypsum ponds with an impervious material. This requirement assumes that this is the only solution to any potential problems. Additional studies are being made in cooperation with the Florida DER and, until these are completed, there is no basis for this requirement.

It may be, at a specific site, that it could be demonstrated that a lining is necessary to protect groundwater; however, this is not the case at the present time.

"Page 9, 5. By-Product Recovery -- a."

Comment: This entire section requiring fluorine compounds recovery should be removed from the scenario. It is unrealistic to require a company to increase its operating costs to recover a product for which there is a limited market. If this material cannot be sold, it will be dumped into the gypsum pond, thereby wasting valuable economic resources -- capital and operating costs. This should be a management decision and has no place in the scenario.

"Page 9. 5. By-Product Recovery -- b."

Comment: This entire section requiring uranium recovery from phosphoric acid should be removed from the scenario. It is unrealistic to require a company to invest substantial capital and incur increased operating costs unless it is assured of a reasonable return on investment. This should be a management decision and has no place in the scenario.

"Page 9, 5. By-Product Recovery -- Basis"

Comment: There is no evidence that recovery of fluorine compounds would reduce emissions, and this statement should be removed from the scenario. It is arbitrary and nonfactual.

"Page 9, II. Existing Sources, A. Modification"

Comment: Since the areawide EIS can have no direct legal impact on existing sources, these recommendations should be excluded. The Federal Guidelines promulgated in November 1976, already require existing sources to comply with new source standards, and only a compliance schedule is left to be worked out with the State DER.

It is mentioned that a study to be completed within the next two years will determine the need or lack of need for lining existing gypsum ponds. How existing gypsum ponds could be lined is unknown and there would not appear to be any practical way that this could be done. This statement implies that EPA plans to conduct such a study.

"Page 9, B. Operation & Maintenance"

Comment: We support this recommendation for in-plant inspections, source sampling, and ambient monitoring. We oppose any proposal that industry pay for this surveillance. The cost should be borne by the Florida DER and EPA.

Sincerely yours,

Homer Hooks

HH/lh

cc: Steering Committee
Advisory Committee

Post Office Box 1480
Bartow, Florida 33830
Telephone: 813/533-3181

CF Industries, Inc.

June 7, 1978

Mr. R. E. McNeill
Environmental Protection Agency
Region IV
EIS Branch
Phosphate Study Unit
345 Courtland Street, N.E.
Atlanta, Georgia 30308

SUBJECT: Draft Areawide Environmental Impact Statement - Central Florida Phosphate Industry

Dear Mr. McNeill:

As a supplement to my May 16, 1978, letter on the captioned subject, there is another area in the DEIS that requires some correction. This area is the correct identification of CF Industries and its Florida facilities in the DEIS.

Throughout the DEIS, CF Industries' three manufacturing locations--CF Chemicals, Central Phosphates, and CF Mining--are confused. The narrative in the first paragraph defines the activity at each location. Phosphate fertilizers are produced by both CF Chemicals and Central Phosphates. Phosphate rock mining is contemplated to commence November 1978 by CF Mining. The DEIS applies incorrect titles to CF Industries' operations on Plate 1 and Pages 1.9, 2.8, and 2.35. W-145

The DEIS does not recognize CF Mining as an existing source whose immediate activities include construction of a phosphate mining facility in Hardee County (Page 2.39). Figure 2.2 (Page 2.8) projects an incorrect production startup date and rate for CF Mining. Present projections are for 1.0-1.5 million tons/year starting in November 1978, with a possible increase to 4.0 million tons/year in Fiscal 1985.

CF Industries' plans for a fertilizer complex in Hardee County are undetermined at this time. The DEIS' statement on Page 2.35 that the plans are cancelled is inaccurate. A more accurate statement would be that no engineering of that phase is currently being done, and that specific plans will be made only as a function of member requirements. W-146

Continued . . .

Under separate cover, CF Industries will present a more formal comment on the content and issues of the DEIS.

Sincerely,

W A Schimming
William A. Schimming
Director, Environmental Affairs

WAS:slh

PLEASE REPLY TO: Senator Richard (Dick) Stone
Suite 200B–2639 North Monroe
Tallahassee, Florida 32303

United States Senate

June 13, 1978

Respectfully referred to:

Environmental Protection Agency
345 Courtland Street, NE
Atlanta, Georgia 30308

Because of the desire of this office to be responsive to all inquiries and communications, your consideration of the attached is requested. Your findings and views, in duplicate form, along with return of the enclosure, will be appreciated by

Richard (Dick) Stone

Richard (Dick) Stone
United States Senator

gvt/c

TLH-7

A Beker Industries Corp. Subsidiary
Suite 51
920 Manatee Avenue West, Bradenton, Florida 33505
Telephone: 813/748-1727

On all correspondence with
Senator Stone regarding this
matter, please refer to
File # 1107816305

June 6, 1978

Senator Richard Stone
1327 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Senator Stone:

The attached letter to Mr. John E. Hagan, III, Chief of EIS Branch, EPA, outlines some of the particular points that need clarification in the Draft Areawide Environmental Impact Statement for the Central Florida Phosphate Industry.

The study was initiated by the President's Council on Environmental Quality following a request by President Ford to look into the matter. President Ford's request was in turn primarily prompted, during the last presidential election campaign, by a request from the publisher of the Sarasota areas only major newspapers, which shortly thereafter endorsed President Ford for reelection.

It has frequently been stated that the study was prompted by the major interest exhibited by the people of the region. The attendance at the workshops and at the recent public hearings belies that statement. The hearing at Manatee Junior College was primarily attended by industry representatives, the media, students or staff of Manatee Junior College and possibly a dozen Sarasota County or beach residents (over 35 miles from the nearest proposed phosphate activity) most of whom are retired and are veteran meeting attendees. Professional representation was also provided by the Audubon Society. It was noteworthy that both Sarasota County and City political body members and representatives, except for the county environmental control director, were absent including their delegate to the advisory committee for this EIS. In fact, only one of the advisory committee members (other than the phosphate representative) was identified as present.

I believe that the message is clear. The study was prompted by the desire of a few, for whatever motives that they might have. The result has the potential for ladening an already over-regulated industry with more rules, higher costs, lost reserves and its inevitable effect on our inflation prone economy.

I do not feel that as a result of this study that any new action is adviseable or needed, but recognizing the inevitability of some form of final statement I have included alternative wording that should be substituted for the EPA's in the final statement. My suggestions are in the letter to Mr. Hagan. I urge you to help by (in the words of The Polk County Democrat) "-- not demanding the impossible from this essential industry" and conveying that thought to CEQ and EPA.

Very truly yours,

Lewis G. Bartow
President

LGB/mg

A Beker Industries Corp Subsidiary
Suite 51
920 Manatee Avenue West, Bradenton, Florida 33505
Telephone: 813/748-1727

June 6, 1978

Mr. John E. Hagan, III, Chief EIS Branch
Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Dear Mr. Hagan:

I have reviewed the Draft Areawide Environmental Impact Statement for the Central Florida Phosphate Industry dated 3/14/78 and offer the comments contained on the following pages for your review and inclusion in the final statement.

We appreciate this opportunity to make our views heard and sincerely trust that due consideration will be given these comments in the ultimate utilization of the Impact Statement.

Very truly yours,

Lewis G. Bartow

Lewis G. Bartow
President

LGB/mg

On page 1.20 reference is made to the natural dry prairie or palmetto prairie. No differentiation is made between secondary, palmetto prairie development and natural development. It should be noted that many areas that are identified as natural prairie are in truth palmetto growth established on previously cleared forested lands. In many areas, pasture lands that are not maintained will almost certainly revert to palmetto scrub. W-147

On page 1.27 the reclamation regulations for mining are reflected upon. The statement is made that the regulations produce a landscape of managed systems, primarily improved pasture. Acknowledgement is not given to the area's developmental progress, other than with respect to phosphate mining activities. Improved pasture lands are developed because a need exists. The same applies to farmland. Either this acreage (the reclaimed area) or some as yet undisturbed acreage will be converted by the agricultural community, if the need exists. Not reclaiming for agriculture does not preclude the addition of acreage for that purpose (with no clearing permit required by the farmer). W-148

On page 1.28 surface water quality characteristics are shown. Levels of phosphate and fluoride in the study area streams are attributed to phosphate mining and processing. Beker has monitored the Manatee and Myakka Rivers for quality (without mining or processing activity) and finds the following, indicating the natural presence of these items:

		Beker	
	EIS	Manatee	Myakka
Tot. dissolved solids	61-409 mg/l	61-354	78-302
Hardness	34-264 "	-	-
Sulfate	6-198 "	2.8-42	.6- 64
Chloride	3-23 "	14-23	15-25
pH	5-8	6.2-7.3	6.0- 7.35
Color	0-280 Pt-Co	50-300	35-350
Phosphate	.4-3.9 mg/l	.81-2.5	.06-1.9
Turbidity	0-350 J.T.U.'s	2.8-27 NTU'S	1.1-16NTU'S

On page 1.28 it is stated that in the 1960's discharges of P & N degraded water quality in the Peace and Tampa Bay Basins. It should also be noted that other studies have shown that additions of P from stream flow discharges have had no additional effect on Tampa Bay due to natural excesses that are already present. W-149

On page 1.41 the projected water demand in Manatee County and/or its major implied cause is incorrectly stated. Only two mines could possibly contribute to the suggested 53 million gallon change during the 1976-1985 period and their total demand is 21 million gallons per day (Swift - 13 mm, Beker - 8mm). Other mines will have their wells in Hillsborough or DeSoto Counties. It should also be noted that the 21 million gallons referred to above is not all increased demand since over 9 million gallons W-150 of agricultural water use will be discontinued when Beker initiates mine water useage.

On page 2.16 it is stated that the estimated water demand per ton of phosphate rock produced is 1,500 gallons. Similarly, Table 2.3 on page 2.12 indicates water requirements of up to 310.84 m.g.d. for mining/beneficiation. Data obtained from SWFWMD and others shows that the overall phosphate industry water use in 1969 was 351 m.g.d., 1970 - 271 m.g.d., 1971 - 250 m.g.d., 1973 - 167 m.g.d., and 1974 - 244 m.g.d. These numbers include other than mining water use as well as for mining. Utilizing the same data sources, mining operations themselves are estimated to require approximately 215 m.g.d. in 1977. It is projected that phosphate mine water useage will peak around 1983 - 1984 at about 245 M.G.D. Thereafter, water withdrawals will fall to about 220 m.g.d. in 1985 and 155 m.g.d. in 1990. The recently published Four Rivers Basin Study offers confirmation with it's industrial water demands by counties for 1975 showing Polk with 264, Hillsborough - 15, Hardee - 1, DeSoto - .3, and Manatee - 3.1. Polk's use declines 60 m.g.d. by 1985 and 233 m.g.d. by the year 2035. Manatee's use increases to 32 m.g.d. in 1985 and then declines to 6.3 in 2035. Hillsborough, Hardee and DeSoto Counties show similar changes. W-151

SWFWMD records for recent permit actions indicate a decrease in the phosphate mining industries water withdrawal demands. Beker's use is equal to 973 gallons per ton of phosphate rock produced. This compares with an average of 2400 gallons per ton for mines permitted prior to 1975 and 1390 gallons per ton since 1975. Each operation must be assessed separately (as is now the case) to determine water needs, but a downward trend seems apparent.

On page 2.18 there ensues a discussion relative to the elimination of slime ponds. There is no question that this is the direction and the result that the industry would like to achieve, but as yet there is no evidence that this is achieveable at all mine sites. The result is in part dependent on the nature of the particular deposit and the minerology of that site as well as on improving technology and achievement. Again, it would appear that a case by case consideration must be given rather than a blanket dictum that slime ponds must be eliminated. It should also be noted that while the report takes note of Mr. Timberlake's remark that "The lands reclaimed have potentially higher resale value -----." It should also be noted that the cost per acre for reclamation of this type could range from $7,000 to $10,000 an acre while the value of agricultural acreage is less than $800 per acre. W-152

On page 2.21 a dry conveyor at an existing mine for the transport of matrix from mine to beneficiation plant is discussed and in other parts of the report is recommended for inclusion at other mines. The information presented on page 2.23, representing the initial cost and the operational cost, was based on projections and not on lengthy operational experience, and as such is inconclusive. It is premature for EPA or others to positively recommend to industry a new technology that has not been sufficiently tested or time proven. The mining company that placed the conveyor in service should be commended for its efforts to improve upon existing practice, but until operational experience has W-153 proven the practicality of the theory, there is no reason for others to duplicate the system. The EPA by seizing upon the still unproven efforts of some, as best available technology, at best, will discourage others from trying new techniques for fear that their efforts will be misinterpreted and adopted by the agency as proven technology.

It will be necessary to develop specifics with the company that is developing the use of the conveyor, but it is thought that phosphate rock recovery losses have been encountered as well as operational difficulties on the belt and with the total system design concept. This does not say that the problems won't be worked out, but it does call for confirmation of the result before making a blanket recommendation.

The comment on page 2.27 that says that the conveyor belt will result in a decrease in water use is inaccurate and does not apply, based on information available at this time.

On page 2.27 reference is made to containment of 10 year and 25 year 24 hour storms. It is not clear if this "containment" envisions above ground storage, which in other parts of the report would be considered disadvantageous, or below ground storage, which in areas of sandy soils W-154 and high water tables is impractical. Again, it would appear that a case by case review must be undertaken in place of implementing broad rules or regulations that will require exceptions in many instances.

On page 2.31 a discussion on mining in wetlands begins. The statement is made that the first part of the scenario would prohibit mining or development--------wetlands as defined by the regulations------by the U.S. Corps of Engineers of Section 404-----. The regulations do not prohibit, but do require permitting prior to proceding. Permit applications can W-155 either be approved or denied, but there is no automatic prohibition, as it is a case by case decision, following the proper procedures for both satisfying environmental concerns and protecting the property owner's rights. *

On page 2.33 the restoration on previously mined wet lands of an equivalent habitat for certain species should relate to the presence, number and the value of those species versus mans alternative use of the land for other purposes. Similarly, it would seem to serve no purpose to re- W-382 claim a flat pond and then see it or an adjacent pond drained for the needed agricultural activity. Again, the philosophy that all wetlands are important or conversely none are important must be replaced with a closer look rather than with a blanket policy such as has been advanced.

On pages 4.2 and 4.3 a statement is made that specifications required by PL 95-87 (Surface Mining Control & Reclamation Act of 1977) should be adopted as measures to apply to phosphate mining in west central Florida. W-383 All of these actions interfere with the property owner's rights relative to the development of his land within the confines of local zoning regulations. The following comments are offered for consideration:

*Please turn to Response to comment number W-382 for responses to remainder of comments in this letter

1. Returning the land to the approximate original contour is the age old and often disproven adage that what was here first was best. Reshaping the land can be useful and beneficial. Annual review of reclamation plans by State and County officials, as presently called for by law, will provide ample control over this reclamation activity.
2. Returning the land to its prior use is meaningless unless that prior use was the highest and best use of that land. This is the true meaning of conservation.
3. Stockpiling topsoil in west central Florida is, in many areas, tantamount to stockpiling sand for replacement on top of more sand. It is evident that "reconstructed soil" can often be preferable and more valuable than the so called topsoil.
4. Commencing reclamation within one year of initial disturbance is applicable to coal, but not to phosphate rock since the disturbed areas often become water holding ponds or part of the water recirculation system.
5. The same comments given in response to 1. & 2. above apply relative to replanting vegetation that existed prior to mining.
6. Reestablishment of surface and groundwater hydrology systems that existed prior to mining ignores the beneficial enhancement of aquifer recharge that can occur with mining. It also ignores the continued use of recharge wells after mining as well as the addition of lakes on the land surface.
7. Designating areas as critical wildlife habitat and prohibiting mining in those areas is again equivalent to condemnation of the land with a disregard for the property owner's rights. Presently, none of the lands in the study area carry the label of critical wildlife habitat and so to wait to apply such a label at the time when a proposed mining venture is being reviewed is ill-conceived.

The foregoing has touched upon some of the points that were considered in the preparation of the following comments relative to recommended changes to the Proposed Action, Section 1. E.

The elimination of rock drying at beneficiation plants assumes that the rock production at the new mine is solely for captive use, since the miner, can not dictate to the ultimate user the plant modification that is needed when using undried phosphate rock. In short, it places the new miner at a competitive disadvantage for if he is to compete with dry rock he must first go to one of his competitors for that service, a distinctly inequitable situation. Further, a restriction of this type in effect says that we should continue with and encourage the use of the older drying plants while foregoing the technological developments that make newer plants more efficient and cleaner. It appears to be self-defeating in purpose. Alternate wording is suggested as follows: W-384

> Rock drying at beneficiation plants must employ emission control devices capable of complying with the prevalent regulations that are designed to protect air quality. The elimination of drying is encouraged and should be pursued whenever practical.

Florida's effluent limitations for discharges have not as yet stood the test of practical compliance. Beker has previously submitted to Florida DER and

W-385

also to EPA statistical findings that show that the new regulations were based on an improper analysis of the permormance of existing mines. Alternate wording would be:

> Florida effluent limitations for discharges vs. actual discharges from existing operations will be monitored and the limitations will be established for all new sources, providing the data demonstrates that the limits can be met using the best available technology. W-386

Eliminating conventional above ground slime-disposal areas is dependent upon the nature of the deposit and the amount and types of clays in the matrix. Suggested wording would be:

> Reduce the area and number of above ground slime-disposal areas to the minimum that is compatible with the nature of the deposit.

The recovery of water from the clay slimes has always been an objective of the phosphate mining industry. However, a limit for effective reuse can be reached. Under those circumstances some recovered water must be released. An example, the proposed Beker mine, will employ well water only for the flotation section requirement where it is necessary. A portion of the recovered water must then be discharged or used in irrigation or land disposal. Suggested alternative wording is: W-387

> Water recovered from slimes shall be stored and reused to the maximum extent possible.

Use connector wells should be modified to read:

> Use connector wells where feasible and with the approval of the water management district and the DER. W-388

The protection and restoration of habitat for important species of wildlife is too broad a requirement in that important species lacks definition and accordingly could be conceived by anti-mining factions to include any and all species, if that served their purpose. The suggested wording is: W-389

> The mining and reclamation plan will take into account the habitat utilized by endangered or threatened species.

Protect or restore wetlands etc. suggested alternative wording is:

> Protect or restore wetlands under the jurisdiction of the Corps of Engineers, Section 404, FWPCA in accordance with conditions contained in the Corps permit. W-390

FLORIDA CHAPTER
OF
THE WILDLIFE SOCIETY

June 20, 1978

John E. Hagan, III
Chief, EIS Branch
Environmental Protection Agency
Region IV
345 Courtland St., N.E.
Atlanta, GA 30308

Dear Dr. Hagan:

The Florida Chapter of The Wildlife Society is a group of professional wildlife biologists concerned about the welfare of fish and wildlife and their habitats in Florida. We have always been interested in wildland areas and we are particularly concerned about landscape alterations and reclamation associated with phosphate mining in this state. We have reviewed the report entitled "Draft Areawide Environmental Impact Statement: Central Florida Phosphate Industry" and hereby submit our comments.

Our major criticism of the report is that it lacks a thorough discussion of the impacts of phosphate mining on fish and wildlife habitats. Throughout the report, there are references to the relative value of various habitat types without substantial reference to the source of the evaluation or methods used in determining the relative values reported. With the exception of the criteria that high habitat diversity supports a diversity of wildlife; it is very misleading and inappropriate to indicate that a particular habitat type has high or low wildlife habitat value. Habitat is desirable or undesirable solely from a standpoint of the ecosystem's ability to satisfy life requirements of particular species. For example, a wetland which supports an abundance of waterfowl, shore and wading birds, frogs, snakes and a highly productive fish population, would likely provide very poor habitat conditions for scrub jays and red-cockaded woodpeckers. Assignment of relative values for wildlife habitats must, therefore, be more specific in the species or groups of species for which comparisons are being made. W-157

Another related point is that above ground slime ponds do have value as wildlife habitats and they add to landscape diversity, but discussion of these benefits are minimal in the draft EIS. As professional wildlife biologists, we support the concept that above ground slime ponds are W-158 beneficial to wildlife (particularly wetland species) and we discourage the total elimination of these areas. In addition, we would like to see changes in the current state regulations (we have expressed this in writing to the Department of Natural Resources) which allow shallower slopes along pond or lake edges resulting in wider littoral zones. Our group has offered (with no success) our assistance to the D.N.R. in development of standards for the reclamation of wildlife habitat values on mined lands.

Reference is made to your species "lists" throughout the report, and although we recognize the importance of identifying a number of those species to be affected, we feel that your selection criteria for "special-concern" and "species of ecological importance" are too arbitrary. For example, on page 2.34 a list of species which would potentially be affected by phosphate mining in wetland areas is presented. Although we can only speculate on the criteria for including many of the species listed, it is difficult to determine why species such as the Florida duck, wood stork, white ibis, roseate spoonbill, osprey, bald eagle, and all common migratory waterfowl are excluded from the list, while the wood duck, black-crowned night heron, Virginia rail, sharp-shinned hawk, and the wild (feral) hog are included. W-159

We believe that the report fails to provide a comprehensive, objective, full disclosure assessment of the impact of phosphate industry activities on fish and wildlife habitats. Also, we would like to see more consideration given to fish and wildlife in your criteria for wetlands restoration. We agree with your statement (pages 2.34 and 3.3 of the report) that good wetlands restoration has yet to be determined, but knowing this, we then find it difficult to understand statements about irreversible habitat alteration (pg. 1.26), regulation of restoration (pg. 1.72), wetlands restoration (pg. 2.5, 2.43) and required wetlands restoration (pg. 2.31). We strongly support the need for further research into restoration of fish and wildlife habitats on phosphate mined lands. W-160

If we may be of any assistance to you, please feel free to contact me.

Sincerely,

Nicholas R. Holler

Nicholas Holler, President
Florida Chapter of The Wildlife Society

NH/sls

THE IZAAK WALTON LEAGUE OF AMERICA
INCORPORATED
DEFENDERS OF SOIL, WOODS, WATER, AIR AND WILDLIFE

MANATEE CHAPTER
1619 Palma Sola Boulevard
Bradenton, Florida 33505

June 21, 1978

Mr. John E. Hagan, III
Chief, EIS Branch
Environmental Protection Agency
Region IV
345 Courtland St., N. E.
Atlanta, GA 30308

Dear Mr. Hagan:

We wish to make the following comments on the Draft Areawide Environmental Impact Statement, Central Florida Phosphate Industry, and request that they be made a part of the May 22 hearing record:

1. We commend the federal government, in particular the EPA, for undertaking this study, since site-specific mining EISs can not deal with cumulative, over-all impacts. We observe with regret, however, that the manner in which the report is organized makes it rather difficult to understand. Inclusion of a summary with material organized by subject would be helpful. W-161

2. We concur with many of the criticisms and comments made at the hearing in Bradenton, in particular the following: W-162

a. Mr. Ernie Estevez on inadequacy of regulatory agency monitoring and control;
b. Mrs. Gloria Rains on radiation hazards, wetlands protection, pollution of air and water, and water resource depletion;
c. Mr. Archie Carr on phosphate industry use of energy and depletion of a national resource;
c. Dr. Jeffrey Lincer on air inversions in the Tampa Bay area.

3. We regret that the study did not reflect original research and that where data were inadequate, an element was frequently excluded from consideration. Examples are:

a. Page 1.32 - "Hydrogeologic conditions favor entrance of contaminants to at least the water-table and upper Floridan aquifers. However, contamination is generally poorly documented due at least in part to monitoring deficiencies. W-163

b. Page 1.50 - "Long-term effects of low radiation doses are not fully known."

c. Page 2.27 - "Because of the lack of data on the extent, if any, of surface and subsurface seepage and the feasibility and adequacy of impervious linings to control this potential source of pollution, effects assessment did not include an objective and quantitative evaluation of this process modification."

d. Page 2.40 - "No data exist, however, to support quantification of the potential for collapse of a slime impoundment or gypsum stack."

e. Page 2.63 - "no secondary impacts could be determined. . .because of the lack of any quantitative model with which to assess the effects of leeching."

f. Page 2.64 - "Quantifying impacts on the general population by exposure associated with the pathways just listed was considered beyond the scope of this program."

4. The Draft EIS presents ample evidence of overwhelming, widespread and serious adverse impacts of phosphate mining and processing, of which some are: alteration of land surface; removal of soils and vegetation; reduction of wildlife habitat and populations; potential effects on air and water quality; reduction of livestock forage during mining; reduced productivity of mined area even after reclamation; reduced recreational resources; potential destruction of archeologic values; redistribution of radionuclids resulting in an increase in human exposure (page 1.50 states "Long-term effects of low radiation exposure is considered harmful, with adverse effects to be proportional to dose." In other words, there is no known "safe" threshold of radiation exposure for humans); reduction in quantity of available ground water; irrevocable commitment of resources including phosphorus and fossil fuel.

We call attention to major adverse effects which are given little importance in the conclusions of the report:

W-164

a. Page 5.2, first paragraph, reads ". . . continued extraction of phosphate from westcentral Florida will shorten the time when future resources will need to come from other locations in Florida, the U. S., or the world. . ." On page 1.2, we read ". .Central Florida . .accounted for approximately 80 per cent of U. S. production and 33 percent of world production in 1976. . . the U. S. could be a net exporter of phosphate rock through the year 2000, but that the demand would likely exceed the domestic supply before the year 2010, requiring that phosphate rock be imported to satisfy all requirements."

This is probably the most important observation in the report, yet it appears to have been given exactly zero weight in the proposed action. Pursuing a policy which risks placing our nation in the position of hostage to foreign countries for needed fertilizer within the next few decades is sheer folly.

W-165

b. Page 6.1, second paragraph cites as an irretrievable resource the fossil fuel necessary to generate electricity needs of the industry. Does this include fossil fuel necessary to transport phosphate? If not, we request an estimate of the cost in fossil fuel to ship Florida phosphate to foreign destinations from now to 2000, and the cost thereafter of shipping foreign phosphate to the U. S. for processing (and further shipment abroad?) Is this scenario in the national interest?

5. We find that some aspects presented as "advantages" require further analysis. Illustrations are cited:

W-166

a. Page 5.1, paragraph one states that undesirable impacts will be "offset in the long term as public knowledge of phosphate operations and regulatory agency activities increases (sic) and broadens (sic) and as the requirements of the proposed action are matched by the performance of the phosphate industry." Is there evidence to substantiate this rather sweeping statement?

We find it wholly unacceptable to "trade", for example, potential damage to the health of people in Manatee County or other areas for presumed benefits to the Port of Tampa with spin-off benefits to Disney World.

W-167

b. Page 5.1, first paragraph, states "The tradeoffs are low-priced fertilizer for enhanced agricultural production. . ." In fact, phosphate frequently feeds the wrong people. A recent U. N. Food and Agricultural Organization report indicates that the "rich are getting fatter and the poor hungrier." In the 32 poorest countries, calorie consumption is on the decline, with the percentage of malnourished on the rise in the developing countries of Africa and Asia. Furthermore, phosphate frequently feeds us the wrong foods. In rich industrialized nations, excessive food intake or improper diets contribute to steadily rising prevalence of such diseases as obesity and artery failure, according to medical authorities.

It appears, also, that there is a law of diminishing returns operating with regard to world grain production and fertilizer use. In 1949-52, each million tons of fertilizer resulted in about 15 million tons of additional grain supplies. In the past few years, the ratio has dropped to less than six to one ("The Global Economic Prospect: New Sources of Economic Stress", Lester Brown).

If low-priced fertilizer is to be considered in the balance as an advantage for the phosphate industry, more serious research is needed, with facts more objectively examined.

W-168

c. Page 5.1, first paragraph cites "reduction in U. S. trade deficits" as an advantage. The unfavorable U. S. trade balance is due entirely to our extravagant use of imported oil. "Trading" the health of Florida residents for wasteful use of energy is wholly unacceptable.

d. While employment appears to be rated an "advantage" of the industry, W-169 we find the following on page 2.60: "Since the service businesses catering to the needs of the retirement and tourist sectors are in direct conflict with the phosphate industry, however, there is good reason to believe that they could absorb surplus workers from the phosphate industry." Thus, there is no need to tolerate the disadvantages in exchange for "jobs".

6. In view of the above comments, we believe there is ample justification for requesting the following actions:

W-170

a. No authorization of new mines until major problems such as radiation in reclaimed areas are better understood, leading to their resolution.

b. Use of all available governmental authority to phase out export of U. S. phosphate within a reasonable period of time, for example, five to ten years.

c. Application to existing sources of the improved techniques proposed for new sources, on a reasonable phase-in schedule. For example, companies which might conduct scavenger operations to recover high-grade phosphate rock from old tailings (page 2.7) would be expected to operate without creating slime ponds. We acknowledge the limitations cited on page 1.74 but call attention to the fact that administrative and legislative remedies are available when needed for public health and safety.

d. Since companies do not plan to open new processing plants, suggestions of new processes such as lining of gypsum ponds are largely academic unless applied to existing sources. Existing plants should therefore be required to line areas to be used for gypsum waste stacks, while awaiting phase-out and while developing means of disposing of those stacks and ponds already accumulated.

Continued processing in the U. S. of imported phosphate after U. S. supplies run out imposes a wholly unacceptable health risk to people in the vicinity of processing plants. Disposal of processing plant waste is recognized as one of the most difficult problems facing the industry (page 5.1). Perhaps a ceiling could be set on the percentage of Florida surface which may be covered with gypsum stacks and ponds.

Sincerely,

Hilda Quy

Hilda Quy, Vice President
Manatee Chapter, IWLA

JUN 23 19[illegible]

CITIZENS AGAINST RIVER POLLUTION

P.O. BOX 1574
RIVERVIEW, FLORIDA 33569

June 19, 1978

Mr. John C. White
Regional Administrator
U.S. Environmental Protection Agency
Region IV
345 Courtland St. NE
Atlanta, Georgia 30308

Re: Central Florida Phosphate Industry
Draft EIS

Dear Mr. White,

Our previous public statement was incomplete, having just received the working papers on the Monday morning of the EPA Bradenton hearing. We ask that you consider the following in the final EIS.

It is not, in our opinion, reasonable to assume that the flood plain areas and wetlands will be mined in the future. Wetlands reclamation technology is not adequately developed on significant to preceed with this assumption. We request requirements for reclamation be included with specific amounts of acreage to be determined successful by EPA standards. The term "acceptable reclamation" or "successful" reclamation needs to be clearly defined. The following example will demonstrate the need for this requirement: On January 3, 1978, W.R. Grace requested a variance from the Hillsborough County Mining Ordinance to mine the wetlands and headwaters of the Little Manatee River. This variance is contingent on the successful reclamation of two acres of wetland to be destroyed (not mined) and restored. W.R. Grace is proceeding with submitted plans to the Hillsborough County Engineering Department and hopes to prove 'successful' reclamation in the near future. There is no agency or party designated to determine the success of this project - to what degree or what time frame is not discussed. This request is in direct violation of EPC rules and regulations and also the Conservation Element of Horizon 2000, Hillsborough County Land Use Plan. The need for Federal guidelines should be evident. W-171

We do not agree that restricting mining of the wetlands forces more extensive upland mining. Rather, we feel maximum restrictions should be required for the protection of the fish and wildlife and the preservation of a resource necessary for life itself - water. The adverse effects on the quality of this vital resource are well documented in regard to mining.

We request specific on-going mechanisms to provide immediate action when adverse impacts of mining have been demonstrated. For example: a. Decline in the Floridian awuafier of three or more feet will prompt a moratorium in the area until sufficient recovery has been substantiated. b. Similiar W-172

CITIZENS AGAINST RIVER POLLUTION
P.O. BOX 1574
RIVERVIEW, FLORIDA 33569

measures indicated by a significant decrease in cfs flow based on data recorded prior to mining in adjacent areas.

We request that the Dept. of Interior, National Wetlands Inventory Office in St. Petersburg be consulted regarding the destruction of the three wetlands categories and the effect that action will have on the surrounding areas plus the effect on the quality of water and increased possibilities of flooding in downstream areas. W-173

We are also sending under separate cover the Hillsborough County well field map which clearly shows the extent of land affected by wetlands mining and tributaries on the Alafia and Little Manatee rivers. To assume that these two rivers will not be severely affected is not a feasible assumption.

It was noted at the Bradenton hearing that the Archibald Research Station studies listed numerous endangered species in the study area and that this document will be included in the final EIS. It has benobserved by a Fish and Wildlife officer and is in the process of verification by U.S. Fish and Wildlife that a Florida panther exists in the Keysville area and uses these wetlands as travel roads. Two nesting bald eagles and a rookery of Sand Hill Cranes are also being verified. W-174

Comments regarding Uranium Recovery and radiation are being sent from the Hillsborough County Environmental Coalition. We urge more specific and thorough recommendations in the final regarding this process. The statement that there is not sufficient data regarding gypsum pond damage is questionable. Please refer to the recent study by USF geologist, Dr. Upchurch regarding Gardinier. We would also request a specific time table for radiation monitoring of the Floridian aquafier.

We request consideration be given to the systematic study of the phosphate resources by the U.S. Fish and Wildlife Service, L.A. Mehrhoff. It is of grave concern to members of our organization that such a valuable program has in no way been incorporated in the Draft EIS. W-175

In conclusion, we support the recommendations of the Tampa Bay Regional Planning Council that the Bone Valley area be designated as an "Area of Critical State Concern". We intend to kpursue this recommendation through all levels of government. It is our opinion that existing laws lack strong guidelines and adequate enforcement. We are also of the opinion that the new source guidelines should be applied to existing mines. IMC has stated in their annual report to the Hillsborough County Commissioners that they intend to mine an additional 918‸purchased recently without filing a DRI to cover this area. Thank you for consideration of these comments in the final EIS.

Sincerely,
Robert Cribbs
Robert Cribbs, President

SINCE NINETEEN HUNDRED "THE VOICE OF CONSERVATION"

May 19, 1978

John C. White
Regional Administrator, Region IV
Environmental Protection Agency
345 Courtland Street, NE
Atlanta, GA 30308

W-176

Dear Mr. White:

Thank you for the opportunity to comment on behalf of the Florida Audubon Society on the Draft Area Wide Environmental Impact Statement, Central Florida Phosphate Industry.

First, I find the Area-wide approach that EPA has taken with the EIS process in Central Florida to be an interesting one and one I think will efficiently lead to equitable environmental protection. I hope history will bear out my optimism.

I would also like to compliment you and your staff for the admirable job of condensing the volumes of information developed by Texas Instruments and subsequent proceedings into a very readable volume.

I have several comments regarding the content of the EIS that are presented in no particular hierarchy of importance:

1) Fluorides: a) It is stated under Environmental Impact of Proposed Action (Section 3, p.3.1) that "no new chemical plants are projected under the proposed action, and consequently, fluorine emissions will not increase."

This I understand is possible largely because existing processing plants will continue to be used for the rendering of phosphate rock from new sources.

It has become abundantly clear to us that old plants retrofitted with fluoride pollution control equipment are far less efficient at controlling fluoride emissions than new plants in which pollution control equipment is designed into the plant from the beginning.

The EIS would be improved by inclusion of the fluoride pollution control capabilities of the plants which are intended to process phosphate from new mines.

FLORIDA AUDUBON SOCIETY
921 Lake Sybelia Drive • P. O. Drawer 7 • Maitland, Florida 32751
(305) 647-2615

b) I appreciate that EPA is recommending biological monitoring of fluorides (Section 4, p.4.1 - Ambient vegetative-fluoride sampling program).

I believe it should be expanded, and I submit for your consideration a research plan (enclosed) authorized by EPA to monitor fluorides potentially emitted by the Occidental Chemical Company operation in the vicinity of the Suwannee River, north Florida.

The results of the north Florida research and the techniques developed there might be very useful to a more complete monitoring program in central Florida.

I will not attempt to outline a specific monitoring program for central Florida, but I do ask that you study the north Florida research plan with an eye for its relevance to the central Florida area.

2) Wetlands: I approve heartily of the intent and justification to protect wetlands expressed in the EIS. I notice that many (36 of 39) archeological sites are located within them, adding to the basic ecological and hydrological good sense of protecting them.

However, I am very disturbed by the concept of cutting the hydrologic throats of the wetlands expressed under "Effects of Controlling Activities in Waters of U.S. and Wetlands," (p.2.90).

If leaving wetlands on desiccating "pedestals"spells their doom, then avoiding them to begin with becomes nonsensical: The Environmental objective is lost and the sacrifice by the phosphate industry is wasted.

I agree with the conclusion that "mining effects on remaining or 'undisturbed' wetlands should be addressed in greater detail..." p.2.91).

I recommend that the principle receive thorough attention in the final EIS and that it be stressed that the danger of wetland garroting should be carefully addressed in site specific EIS proceedings.

3) Energy and Phosphate Conservation: It is apparent that the huge energy requirement for phosphate mining and processing (p.2.7.) is met only because the industry receives a subsidy (lower rates) from TECO and Florida Power.

Just as it is said that the industry competes with the public for aquifer water, so it can be argued that the industry competes with the public for energy.

From data presented on phosphate supplies and demands (p.2.8-2.11) it is apparent that more energy will be required to extract a given unit of rock in the very near future. Sub-economic resources are expected to become economically recoverable when the market value of phosphate increases.

The fallacy and danger of this argument is that not only more money but more energy will be required to produce what are currently sub-economic resources. Energy, unlike the market, will not inflate. It will only deplete. Thus there will be two interdependent and non-renewable resources following extinction curves, and the cost of phosphate, energy and food will be logrithmically increasing.

I cannot help but envision a crisis emerging from these divergent curves. I believe the history of fossil fuels is a sufficient model to lead to this conclusion, but I have every confidence that a complete evaluation of current phosphate resource management practices would prove the point.

In view of the above, I look with great concern on the industry's enthusiastic search for new and larger phosphate markets abroad. It is argued that the national balance of trade is served by phosphate export. What fossil import is required to subsidize that export? I would be more content if in the final EIS the U. S. Department of Energy commented on this point and on the compliance of phosphate mining expansion with national energy policies.

I am inclined to believe that American agriculture and the American consumer are being "set up" for a food-cost crunch in the near future, perhaps before 2000. This crunch could be at least postponed by domestic resource conservation commensurate with incentives to Morocco to bring her massive resources on line rapidly.

In summary, I believe EPA will succeed in providing for a clean industry in west central Florida if the Area-Wide EIS is adhered to. But I am worried that EPA is becoming innocently involved in gross resource mismanagement. If I am correct, then the cleanliness will be a trivial accomplishment.

Sincerely,

Archie Carr III

Archie Carr, III
Special Assistant to the
President for Science

sh

enclosures

SINCE NINETEEN-HUNDRED "THE VOICE OF CONSERVATION"

May 24, 1978

W-177

John C. White
Regional Administrator, Region IV
Environmental Protection Agency
345 Courtland St., NE
Atlanta, GA 30308

Dear Mr. White:

Please consider this an addendum to my May 19, 1978 critique of the Draft Area Wide Environmental Impact Statement, Central Florida Phosphate Industry.

A close scrutiny of the EIS's treatment of endangered species finds it to be frighteningly casual and superficial. There is a blase mood surrounding the fate of these organisms in the statement. On pages 1.22 - 1.27, threatened and endangered plants and animals in the seven-county area are identified, and the general conclusion is drawn that phosphate mining will heavily impact upon them. Later in the document under Section 6, Irreversible and Irretrievable Commitments of Resources, it is stated that 45,000 acres of endangered species habitat will be lost.

That is the sum total of the discussion. From the standpoint of biological management and probably from the standpoint of law, it is an inadequate discussion.

EPA has the responsibility under the National Environmental Policy Act and possibly under the Endangered Species Act to seek to protect endangered species and their critical habitats. In the Draft Area Wide Impact Statement, there is no mention of how EPA intends to achieve this protection.

Measures to provide for both mining and endangered species protection have been presented during the past year by the Fish and Wildlife Service. These include phased mining schemes whereby habitat from one mine is restored prior to opening of the next mine in a sequence; establishment of refugia and corridors to preserve pathways for gamete exchange and other behavioral needs.

Neither of these ideas nor any other mitigating procedure is advanced in the Draft EIS.

921 Lake Sybelia Drive • P. O. Drawer 7 • Maitland, Florida 32751
(305) 647-2615

The omission is intolerable to the Florida Audubon Society.

I have a specific concern for the proposed mining impacts on the Florida Panther. Members of the Florida Panther Recovery Team and the Florida Game and Fresh Water Fish Commission are of the opinion that the Myakka State Park is an important habitat for the panther, possibly second in importance only to the Fakahatchee Strand in the Everglades. I note that mining is proposed within the Myakka River drainage basin and in very close proximity to the Park. The obvious question arises: will the mining damage the recovery potential for the Florida Panther?

No answer is given in the Draft EIS.

In summary, the Final Impact Statement must address the management of endangered species in the seven-county area far more thoroughly if it is to do justice to law and common sense.

Sincerely,

Archie Carr III

Archie Carr, III
Special Assistant to the President for Science

dp

[illegible] 20 [illegible]

STATE OF FLORIDA

Department of Administration

Division of State Planning
Room 530 Carlton Building
TALLAHASSEE
32304
(904) 488-1115

R. G. Whittle, Jr.
STATE PLANNING DIRECTOR

Reubin O'D. Askew
GOVERNOR

Wallace W. Henderson
SECRETARY OF ADMINISTRATION

RECEIVED
JUN 26 1978

June 22, 1978

Mr. John E. Hagan, III
Chief, EIS Branch
U. S. Environmental Protection
Agency, Region IV
345 Courtland Street, N. E.
Atlanta, Georgia 30308

Dear Mr. Hagan:

Functioning as the state planning and development clearinghouse contemplated in the U. S. Office of Management and Budget Circular A-95, we have reviewed the following Draft Areawide Environmental Impact Statement: Central Florida Phosphate Industry, SAI 78-1763E.

During our review we referred the environmental impact statement to the following agencies, which we identified as interested: Department of Agriculture and Consumer Services, Department of Community Affairs, Department of Commerce, Department of Legal Affairs, Department of Environmental Regulation, Department of Health and Rehabilitative Services, Department of Natural Resources, Department of State, Department of Transportation, Game and Fresh Water Fish Commission, Department of Administration's Bureau of Land and Water Management, Southwest Florida Regional Planning Council, Southwest Florida Water Management District, and South Florida Water Management District. Agencies were requested to review the statement and comment on possible effects that actions contemplated could have on matters of their concern. Letters of comment on the statement are enclosed from: Department of Agriculture and Consumer Services, Department of Commerce, Department of Community Affairs, Department of Health and Rehabilitative Services, Department of Legal Affairs, Department of Natural Resources, Department of Administration's Bureau of Land and Water Management, South Florida Water Management District, Southwest Florida Regional Planning Council, and Sarasota County.

Our review of the agency comments finds that the Environmental Protection Agency must be commended for its efforts in addressing the complex issues surrounding phosphate mining in central Florida. However, we must also note that many of the agency reviews have cited deficiencies in this draft impact statement.

Generally, Environmental Impact Statements address site specific issues. This draft document is unlike the typical statement as it addresses concerns of a broad regional nature. The final statement on this program will be used as a basic source document for future detailed site or project impact statements. Therefore, this document is of major importance to us and will assume greater importance in the future. As this statement will achieve major significance and as we have found deficiencies in this draft document, we suggest that it be revised to reflect our concerns. We further suggest that the revised statement propose a mechanism which would establish a continuous updating process in order to provide a current basis for the site specific impact statements that will follow.

In accordance with the Council on Environmental Quality guidelines concerning statement on proposed federal actions affecting the environment, as required by the National Environmental Policy Act of 1969, and U. S. Office of Management and Budget Circular A-95, this letter, with attachments, should be appended to the final environmental impact statement on this project. Comments regarding this statement and project contained herein or attached hereto should be addressed in the statement.

We request that you forward us copies of the final environmental impact statement prepared on this project.

Sincerely,

R. G. Whittle, Jr.
Director

RGWjr:Kb
Enclosures
cc: Mr. John Bethea
Mr. Charles Blair
Mr. Martin Freidman
Mr. Joseph W. Landers, Jr.
Mr. W. N. Lofroos
Mr. Loring Lovell
Mr. William Partington
Mr. William J. Page, Jr.
Mr. William Ravenell
Mr. Harmon Shields
Mr. Phil Ashler
Mr. H. E. Wallace
Mr. L. Ross Morrell
Mr. Helge Swanson
Mr. Walter O. Kolb
Mr. John Maloy
Mr. Donald Feaster
Mr. Roland Eastwood

STATE OF FLORIDA

Department of Administration

Division of State Planning

660 Apalachee Parkway - IBM Building
TALLAHASSEE
32304
(904) 488-2371

Whittle, Jr.
PLANNING DIRECTOR

Reubin O'D. Askew
GOVERNOR

Lt. Gov. J. H. "Jim" Williams
SECRETARY OF ADMINISTRATION

OF STATE FUNDING
Bureau Of
Intergovernmental Relations
MAY 9 1978
RECEIVED
SAI NO.

RECEIVED
MAY 2 1978
EXECUTIVE DIRECTOR
DEPT. OF NATURAL RESOURCES

DATE: 5-1-78

DUE DATE: 5-15-78

TO: Mr. Harmon Shields
Department of Natural Resources
202 Blount Street, Crown Building
Tallahassee, Florida 32304

FROM: Bureau of Intergovernmental Relations

SUBJECT: SAI: 78-1763

The attached "Advance Notification" of intent to apply for federal assistance is being referred to your agency for review and comments. Your review and comments should address themselves to the extent to which the project is consistent with or contributes to the fulfillment of your agency's plans or the achievement of your projects, programs and objectives.

If further information is required, you are urged to telephone the contact person named on the notification form. If a conference seems necessary, or if you wish to review the entire application, contact this office by telephone as soon as possible. If you have no adverse comments, you may wish to report such by telephone. Please check the appropriate box, attach any comments on your agency's stationery, and return to this office or telephone by the above due date. If we do not receive a response by the due date, we will assume your agency has no adverse comments. In both telephone conversation and written correspondence, please refer to the SAI number.

Sincerely,

Loring Lovell, Chief
Bureau of Intergovernmental Relations

Enclosure

****

TO: Bureau of Intergovernmental Relations
FROM: Department of Natural Resources
SUBJECT: Project Review and Comments, SAI: 78 - 1763

☐ No Comments ☒ Comments Attached

Signature: James G. Smith Date: May 9, 1978

Title: Administrative Assistant

3-120

May 9, 1978

State of Florida
Department of Natural Resources
Comments on
SAI: 78 - 1763

Staff concludes that this statement is a very well written document. Adequate alternatives to the proposed action were sufficient for summary type evaluation.

A subject not adequately discussed in the draft was the present extent and quality of restoration/reclamation projects. If mining is indeed to continue in west-central Florida, restoration/reclamation should be continuing at a rate equal to or greater than the rate of mining. W-178

The subsequent use of the land after it has been restored/reclaimed is of great interest to the Division of Recreation and Parks. Another subject which was discussed sufficiently in the draft statement was the level of radionuclides and floro-compounds which may be assimilated by plants and animals as part of the restoration project. The aesthetic quality and types of uses in which the reclaimed land might be involved are not quite clear. Some discussion was given to human, agricultural, and wildlife uses of these lands, but a thorough evaluation was not included. W-179

Mining as described in the "Primary Effects of 'Permit Existing and New Sources' Alternative" section depletes the extent of Florida's sandhill, sandpine scrub, and hammock habitats. Each of these habitat associations are considered by the Department of Natural Resources to be highly endangered. The Department advises against destroying or altering these associations whenever possible. W-180

As understood by the Division of Recreation and Parks, site specific environmental assessments or impact statements for each new source will be distributed for review. W-181

Staff appreciate the opportunity to review this fine draft statement. In closing, the Division of Recreation and Parks strongly supports the following quotation from page 2.83 of the draft statement:

> "There is every reason to believe that increased mining activity could impact unfavorably on the multimillion dollar tourist/recreation industry by reducing or altering the scenic attraction of the area."

STATE OF FLORIDA

Department of Administration

Division of State Planning

660 Apalachee Parkway · IBM Building

TALLAHASSEE

32304

(904) 488-2371

Reubin O'D. Askew
GOVERNOR

Lt. Gov. J. H. "Jim" Williams
SECRETARY OF ADMINISTRATION

DIVISION OF STATE PLANNING
Bureau of Intergovernmental Relations
MAY 17 1978
RECEIVED
SAI NO. ______

RECEIVED
MAY 1978
OFFICE OF MANAGEMENT AND [illegible]

RECEIVED
MAY 3 1978
SECRETARY OF COMMERCE

DATE: 5-1-78

DUE DATE: 5-15-78

TO: Mr. Phil Ashler
Department of Commerce
510 Collins Building
Tallahassee, Florida 32304

FROM: Bureau of Intergovernmental Relations

SUBJECT: SAI: 78-1763

Draft Environmental Impact Statement

The attached ~~"Advance Notification" of intent to apply for federal assistance~~ is being referred to your agency for review and comments. Your review and comments should address themselves to the extent to which the project is consistent with or contributes to the fulfillment of your agency's plans or the achievement of your projects, programs, and objectives.

If further information is required, you are urged to telephone the contact person named on the notification form. If a conference seems necessary, or if you wish to review the entire application, contact this office by telephone as soon as possible. If you have no adverse comments, you may wish to report such by telephone. Please check the appropriate box, attach any comments on your agency's stationery, and return to BIGR or telephone by the above due date. If we do not receive a response by the due date, we will assume your agency has no adverse comments. In both telephone coversation and written correspondence, please refer to the SAI.

To: Jim Collins

Sincerely,

Loring Lovell, Chief
Bureau of Intergovernmental Relations

8-2371

Enclosure

****

TO: Bureau of Intergovernmental Relations
FROM: Department of Commerce
SUBJECT: Project Review and Comments, SAI: 78-1763

☑ No Comments

☐ Comments Attached

Reviewing Agency:
Signature: ______ Date: May 15, 1978
Title: Chief, Bureau of Economic Analysis

3-122

Department of Administration

Division of State Planning

660 Apalachee Parkway · IBM Building

TALLAHASSEE

32304

(904) 488-2371

Reubin O'D. Askew, Governor

RECEIVED
MAY 5 1978
DEPT. OF COMMUNITY AFFAIRS
DIV. OF TECHNICAL ASSISTANCE

DIVISION OF STATE PLANNING
Bureau Of
Intergovernmental Relations
JUN 5 1978
RECEIVED
FILE NO.

TO: Mr. William H. Ravenell, Secretary
Department of Community Affairs
Howard Building
Tallahassee, Florida 32301

DATE: 5-1-78

DUE DATE: 5-15-78

FROM: Bureau of Intergovernmental Relations

SUBJECT: SAI: 78-1763

The attached "Advance Notification" of intent to apply for federal assistance is being referred to your agency for review and comments. Your review and comments should address themselves to the extent to which the project is consistent with or contributes to the fulfillment of your agency's plans or the achievement of your projects, programs, and objectives.

If further information is required, you are urged to telephone the contact person named on the notification form. If a conference seems necessary or if you wish to review the entire application, contact this office by telephone as soon as possible. If you have no adverse comments, you may wish to report such by telephone. Please check the appropriate box, attach any comments on your agency's stationery, and return to this office or telephone by the above due date. If we do not receive a response by the due date, we will assume your agency has no adverse comments. In both telephone conversation and written correspondence, please refer to the SAI number.

Sincerely,

Loring Lovell, Chief
Bureau of Intergovernmental Relations

Enclosure

TO: Bureau of Intergovernmental Relations
FROM: Department of Community Affairs
SUBJECT: Project Review and Comments, SAI: ____________

☐ No Comments ☑ Comments Attached

Signature: ____________ Date: ____________

Title: Director – Div of Tech'al Ast

3-123

DEPARTMENT OF COMMUNITY AFFAIRS

REUBIN O'D. ASKEW, GOVERNOR
WILLIAM H. RAVENELL, SECRETARY

DIVISION OF TECHNICAL
ASSISTANCE

M E M O R A N D U M

DATE: May 31, 1978

TO : Loring Lovell, Division of State Planning

FROM: John Sidor, Jr. JS

SUBJ: Draft Areawide Environmental Impact Statement
Central Florida Phosphate Industry (SAI #78-1763)

This Environmental Impact Statement is very well written and covers some key points.

However, from the angle of local government we would like to have more information on the impact the future mining and population growth will have on the provision of services such as water, sewer, schools and recreation facilities. The phosphate industry has been helpful in other areas in providing certain facilities, sometimes open to the public, sometimes for employees and families only. Some indication of future plans would be helpful in evaluating the proposal.

W-182

JS/mu

Director . . . Local Government . . . Housing Assistance . . . Planning & Research . . . Community Development
488-2356 488-7956 488-1536 488-2356 488-1536
2571 Executive Center Circle, East, Tallahassee, Florida 32301

DIVISION OF STATE PLANNING,
Bureau Of
Intergovernmental Relations
MAY 17 1978
RECEIVED

STATE OF FLORIDA

DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES

PRIOR NOTIFICATION AND REVIEW SYSTEM

William J. Page, Jr.
Secretary

Date: May 15, 1978

MEMORANDUM

REF. NO: DHRS ____________ SPDC (SAI) 78-1763E

TITLE Central Florida Phosphate Industry

APPLICANT U. S. Environmental Protection Agency

TO: Lt. Governor J. H. Williams

Attn: Loring Lovell, Chief
Bureau of Intergovernmental Relations

FROM: William J. Page, Jr.
Department of Health and Rehabilitative Services

BY: Office of Program Planning and Development

SUBJ: NOTIFICATION OF INTENT TO APPLY FOR FEDERAL FUNDS

☑ The project is consistent with the goals and objectives of the Department of Health and Rehabilitative Services. Favorable action is recommended.

☐ Substantive comments have been received and are summarized in the attached.

☐ Conference with applicant is requested.

☐ The project is not consistent with the goals and objectives of the Department of Health and Rehabilitative Services. Approval is not recommended for reasons described in the attached.

Attachment (s)

STATE OF FLORIDA

Department of Administration

Division of State Planning

660 Apalachee Parkway - IBM Building

TALLAHASSEE

32304

(904) 488-2371

R G Whittle, Jr
STATE PLANNING DIRECTOR

Reubin O'D. Askew
GOVERNOR

Lt. Gov. J. H. "Jim" Williams
SECRETARY OF ADMINISTRATION

Bureau of
Intergovernmental Relations
MAY 16 1978
RECEIVED

TO: Dept. of Legal Affairs
The Capitol
Tallahassee, Fl.

DATE: 5-1-78

DUE DATE: 5-15-78

RECEIVED
MAY 2 1978
ATTORNEY GENERAL'S
OFFICE

FROM: Bureau of Intergovernmental Relations

SUBJECT: SAI: 78-1763

The attached notification of intent to apply for federal assistance is being referred to your agency for review and comments. Your review and comments should address themselves to the extent to which the project is consistent with or contributes to the fulfillment of your agency's plans or the achievement of your projects, programs and objectives.

If further information is required, you are urged to telephone the contact person named on the notification form. If a conference seems necessary, or if you wish to review the entire application, contact this office by telephone as soon as possible. If you have no adverse comments, you may wish to report such by telephone. Please check the appropriate box, attach any comments on your agency's stationery, and return to BIGR or telephone by the above date. If we do not receive a response by the due date, we will assume your agency has no adverse comments. In both telephone conversation and written correspondence, please refer to the SAI number.

Sincerely,

Loring Lovell, Chief
Bureau of Intergovernmental Relations

Enclosure

****

TO: Bureau of Intergovernmental Relations

FROM:

SUBJECT: Project Review and Comments, SAI: 78-1763E

☒ No Comments ☐ Comments Attached

Signature:

Date: May 15, 78

Title: Admin Asst to Atty Gen

3-126

STATE OF FLORIDA
Department of State
THE CAPITOL
TALLAHASSEE 32304

BRUCE A. SMATHERS
SECRETARY OF STATE

L. ROSS MORRELL, ACTING DIRECTOR
DIVISION OF ARCHIVES, HISTORY, AND
RECORDS MANAGEMENT
(904) 488-1480

Intergovernmental Relations
JUN 1 1978
RECEIVED
SAI NO. ____

May 16, 1978

IN REPLY REFER TO:
Mr. Louis D. Tesar
Historic Sites Specialist
(904) 487-2333

Mr. Loring Lovell, Chief
Bureau of Intergovernmental
Relations
Division of State Planning
Room 530, Carlton Building
Tallahassee, Florida 32304

Re: Clearing House Meeting
SAI 78-1763
Draft Areawide Environmental Impact Statement
Central Florida Phosphate Industry
Charlotte, DeSoto, Hardee, Hillsborough,
Manatee, Polk and Sarasota Counties, Florida

Dear Mr. Lovell:

On May 11, 1978, this agency's representative, Mr. Louis Tesar, attended a Clearinghouse Meeting to review the Draft Environment Impact Statement on the Central Florida Phosphate Industry. At that meeting Mr. Tesar once again stated this agency's concern that archaeological and historical site remains, as non-renewable resources, be directly addressed in any goals and requirements recommended by the United States Environmental Protection Agency in the forthcoming final EIS of the Central Florida Phosphate Industry. To this end, as requested at that meeting, we have prepared this written response.

W-183

We recognize, as was repeatedly stated by the Environmental Protection Agency's representative, Mr. James MacNeill, that this document is being offered only as a working paper with suggested guidelines, and is not considered as a final procedural document. However, as was stressed by several other state agencies, it is our concern that this document, promulgated under the auspices of the United States Environmental Protection Agency, will take on the aura of an official government report and repeatedly be returned to us as a base document in the preparation of the by-project environmental impact statements which it presumably is not intended to supercede.

We recognize and concur with the statement on page 2.59 of the draft under review:

> "Most Archeological sites are considered by archeologists as fragile and, as such, would be permanently altered or destroyed if minded. Florida's Division of Archives, History, and Records Management (1976) has expressed concern that valuable sites within the study area may be lost or may suffer irreversible damage; this agency maintains that the effects will occur on a regional level and may result in the permanent loss of a sizable portion of Florida's archeological record. Unless measures to collect and preserve the artifacts are taken before mining, the state office's concerns will be valid."

However, we believe that these concerns should also be explicity presented in the "Goals and Requirements" section of the final draft of this EIS.

As currently presented (see page 3.6 of Draft EIS), it is assumed that most archaeological and historical sites would be protected through the indirect method of protecting water quality by recommending against the use of Category I waters. While it is true that most of the presently known archaeological and historical sites occur within Category I areas, it is stressed that they are by no means restricted to such areas. For instance, on page 2.3 the W. R. Grace tract is used as an example. We might point out that of the five sites located in that tract the two considered significant and recommended for preservation or mitigation through archaeological salvage excavation are both located outside of Category I wetlands. One was located overlooking the head of a small seepspring, while the other was located on the edge of an upland ridge surrounding the lower prairie wetlands.

It is for this reason we would suggest that, on page 1.72, following the discussion on the three categories of wetlands, a direct commitment for the need to conduct archaeological and historical site assessment surveys, as well as to avoid or mitigate significant site remains identified as a result of such surveys should be presented. The suggested wording for this commitment might include the concepts embodied in the following:

> It is recommended that the impact to archaeological and historical site resources be addressed in the project review procedure. Early in the planning stage the Florida Division of Archives, History and Records Management should be contacted to determine whether or not project activities might impact any known or presently unknown archaeological or historical site remains. If necessary an archaeological or historical site assessment survey should be conducted of the project area to locate and identify significant site remains. The resulting report should be submitted to the Florida Division of Archives, History and Records Management for review. Efforts should be made to preserve through avoidance or mitigate through archaeological salvage excavation by a professionally competent agency any sites deemed significant. If mitigation is chosen, the resulting report should be submitted to the Florida Division of Archives, Hisotry and Records Management for review and comment. In this manner our nation will be assured that its culturally valuable archaeological and historical resources are being properly managed and the information recorded for future generations.

W-184

The opportunity to comment is appreciated. If you have any questions, please feel free to contact us.

Your interest and cooperation in protecting Florida's irreplaceable historic resources are appreciated.

Sincerely,

L. Ross Morrell
Deputy State Historic
Preservation Officer

LRM:Tjw

cc: Walt Kolb

Department of Administration

Division of State Planning
Room 530 Carlton Building
TALLAHASSEE
32304
(904)488-4925

R.G. Whittle, Jr.
STATE PLANNING DIRECTOR

Reubin O'D. Askew
GOVERNOR

Wallace W. Henderson
SECRETARY OF ADMINISTRATION

May 22, 1978

MEMORANDUM

TO: Walt Kolb

THROUGH: James May

FROM Jim McNeal

SUBJECT: SAI #78-1698E, Draft Areawide Environmental Impact Statement, Central Florida Phosphate Industry

The Bureau of Land and Water Management has reviewed the Draft Areawide EIS and submits the following observations.

The mining of phosphate rock in central Florida is a very energy intensive activity. Even so, this document does not incorporate energy consumption into the evaluation of the various development scenarios. W-185

Elimination of the rock drying process would reduce the demand for electricity by the industry. This reduction should be contrasted to the increased energy use to transport the wet rock to chemical plants. Mining operations which ship rock outside Florida for chemical processing may be excused from this requirement but will be afforded an energy evaluation. W-186.

Since this process modification is the only proposal which will affect air quality, exceptions should be limited to environmental or climatic factors; not to include whether a plant is capable of receiving wet rock. W-187

Recovery of fluoride from recirculated process water should be encouraged by recognizing fluoride as a pollutant and not singularly by the economics of the process. Reported costs of fluoride recovery operations exceed prices by 25 to 36 percent but fluoride emissions remain an important air pollutant. Fluoride escapes from gyp ponds and should be included in calculating fluoride emissions from the complex. Such emissions are reduced by the recovery of fluoride from recirculated process water, including scrubber water. W-188

Thus, such recovery could be viewed to accomplish some functions of a pollution control device.

At the time of this draft, the groundwater model could only project water level effects to the Floridan Aquifer from the phosphate industry. Presently the model can incorporate the effects from other industrial, agricultural and municipal uses. Incorporating these demands in concert with those of the phosphate industry would present a more realistic evaluation of the cumulative stresses on the groundwater aquifer, which does not discriminate water pumpage by use. The final EIS should utilize this advancement of the model in evaluating the proposed action. We would also like to know if EPA intends to develop guidelines for water withdrawals for phosphate mines in central Florida. W-189

From discussion in the report, placing top soil dressing over mined areas appears to be a significant act of reclamation relative to achieving low final background radiation levels. However, in discussion this idea was not considered significantly effective. Does the lead agency consider this action worthwhile to pursue in reclamation efforts? W-190

A major conclusion in the report that technology does not provide for restoring freshwater wetlands or forest types to their native condition on mined land needs to be more specifically addressed. Agreed the deep sand soils necessary for mixed forests, and the hydrology and drainage patterns in wetlands are difficult to re-create. However, restoration of these lands to support similar communities and perform the essential functions of these environments is possible, and certainly should be encouraged. W-191

The steep-sided, relatively deep lakes now predominating in reclaimed land were stated to be of little long-term value. This Bureau would like to be appraised of any recommended alternative designs and limiting depths to consider, in view of the climate in west-central Florida, to promote improved water quality. W-192

Industry sponsored research at test sites has developed some improved methods for slime disposal and subsequent reclamation of these areas. While we have seen few determined field efforts toward the near future elimination of slime ponds, we fully support efforts to modify the conventional slime disposal method and maintain aboveground storage to an absolute minimum. These efforts will become more important in daily operations as the richer deposits in Polk County are depleted and the industry extends into Hardee, DeSoto, and Manatee Counties. Here, the matrix is a much lower grade and when mined will send a higher percentage of the matrix to flotation mills and generate increased amounts of slime waste. W-193

Our final comment is that a display projecting anticipated events, maybe in 5 year increments, would assist visualizing the cumulative impact to the region; i.e., Floridan Aquifer potentiometric surface maps, wetlands coverage, etc. We could then follow the progressive changes by comparing such maps from the past to the present. Perhaps we could also recognize undesirable events progressing into the future as well and establish limits for the alteration of present conditions.

We recognize the monumental and complex issues inherent to the Central Florida Phosphate District and congratulate the EPA on this effort in defining the environmental issues.

JM/lw

JOHN R. MALOY, Executive Director

South Florida
Water Management District

POST OFFICE BOX V, WEST PALM BEACH, FLORIDA, 33402

TELEPHONE 305-686-8800

IN REPLY REFER TO: 9-109-A

May 10, 1978

DIVISION OF STATE PLANNING,
Bureau Of
Intergovernmental Relations

MAY 23 1978

RECEIVED

SAI NO. ____________

Mr. Loring Lovell, Chief
Bureau of Intergovernmental Relations
Division of State Planning
Department of Administration
660 Apalachee Parkway-IBM Building
Tallahassee, Florida 32304

RE: SAI: 78-1763 Draft Areawide Environmental Impact Statement
Central Florida Phosphate Industry

Dear Loring:

We have completed our review of the above referenced draft and offer the following comments.

- Planned water conservation practices as described in the document, which essentially consist of recirculation and reuse of water, will very substantially reduce the demands for water as compared to existing and especially as compared to past practices. Thus, impact on potentiometric heads in the Floridan aquifer is expected to be reduced.
- Potentiometric heads referred to above will be the only impact that may affect the SFWMD. Pumpage from the Floridan aquifer for use in phosphate mining and benefaction may create declines in potentiometric heads extending into the SFWMD. These impacts are in addition to head declines occasioned by citrus industries' use. It is suggested that because these declines are anticipated to be minimal, no substantive changes are anticipated.
- In overall content, the EIS was put together very well, detailed and rather thoroughly documented.

Robert L. Clark, Jr.
Chairman - Fort Lauderdale

Dr. John M. DeGrove
Vice Chairman - Boca Raton

C. A. Thomas
Lake Harbor

Robert W. Padrick
Fort Pierce

W. J. Scarborough
Lake Placid

J. R. Spratt
La Belle

R. Hardy Matheson
Miami

Ben Shepard
Hialeah

Stanley Hole
Naples

Maurice L. Plummer
Ft. Myers

Formerly Central and Southern Florida Flood Control District

We appreciate this opportunity to review the draft and do hereby request that we be sent a copy of the final EIS.

Sincerely,

Susan M. McCormick/bm

SUSAN M. McCORMICK, Director
Land Resources Division
Resource Planning Department

SMM:bhm

Southwest Florida Regional Planning Council
2121 West First Street, Fort Myers, Florida 33901 (813) 334-7382

DIVISION OF [illegible]
JUN 19 [illegible]
RECEIVED
SAI NO.

Mr. Loring Lovell, Chief
Bureau of Intergovernmental Relations
Division of State Planning
Department of Administration
530 Carlton Building
Tallahassee, Florida 32304

RE: OMB A-95 Clearinghouse Review of the "Draft EIS for Central Florida Phosphate Industry," SAI 78-1698E (RPC #78-143).

Dear Mr. Lovell: June 16, 1978

At the June 15, 1978, meeting of the SWFRPC, the Council officially endorsed the enclosed staff review and recommendations on the above-referenced draft EIS. In addition to this enclosure, please find the official comments of Sarasota County; a local government impacted by the Central Florida Phosphate Industry. The receipt of any additional comments from other affected local governments or interested parties will be forwarded immediately. If you have any questions concerning the attached material, please do not hesitate to contact us.

Sincerely,

SOUTHWEST FLORIDA REGIONAL PLANNING COUNCIL

Wayne E. Daltry

Wayne E. Daltry
Planning Director

WED/RSC/naf

cc: Walter Kolb, Comprehensive Planning
Mr. James Duane, Executive Director, Central Florida RPC
Mr. Scott Wilson, Executive Director, Tampa Bay RPC

Enclosures

Southwest Florida Regional Planning Council

2121 West First Street, Fort Myers, Florida 33901 (813) 334-7382

Mr. Loring Lovell, Chief
Bureau of Intergovernmental Relations
Division of State Planning
Department of Administration
530 Carlton Building
Tallahassee, Florida 32304

RE: OMB A-95 Clearinghouse Review of the "Draft EIS for Central Florida Phosphate Industry," SAI 78-1698E (RPC #78-143).

Dear Mr. Lovell: June 16, 1978

At the June 15, 1978, meeting of the SWFRPC, the Council officially endorsed the enclosed staff review and recommendations on the above-referenced draft EIS. In addition to this enclosure, please find the official comments of Sarasota County; a local government impacted by the Central Florida Phosphate Industry. The receipt of any additional comments from other affected local governments or interested parties will be forwarded immediately. If you have any questions concerning the attached material, please do not hesitate to contact us.

Sincerely,

SOUTHWEST FLORIDA REGIONAL PLANNING COUNCIL

Wayne E Daltry

Wayne E. Daltry
Planning Director

WED/RSC/naf

cc: ✓Walter Kolb, Comprehensive Planning
Mr. James Duane, Executive Director, Central Florida RPC
Mr. Scott Wilson, Executive Director, Tampa Bay RPC

Enclosures

COUNTY OF SARASOTA
FLORIDA

BOARD OF COMMISSIONERS

ANDREW SANDEGREN * DISTRICT 1
BEVERLY CLAY * DISTRICT 2
JAMES D. NEVILLE * DISTRICT 3
JOHN M. SABA, JR. * DISTRICT 4
LARRY RHODES * DISTRICT 5
ED MAHONEY * COUNTY ADMINISTRATOR

P.O. BOX 8
SARASOTA, FLA. 33578
PHONE 813/365 1000

June 14, 1978

Mr. Roland H. Eastwood
Southwest Florida Regional Planning Council
2121 West First Street
Ft. Myers, Florida 33901

Re: Draft Environmental Impact Statement,
Central Florida Phosphate Industry

Dear Mr. Eastwood:

This letter is being submitted in response to your May 16, 1978, request for comments in accordance with OMB Circular A-95. Our analysis of the above cited environmental impact statement and, in particular, its Proposed Action component, has occurred primarily within the context of existing and evolving plans, programs, policies and objectives of Sarasota County.

The comments which follow have not been confined, however, to simply the direct impacts that the Central Florida phosphate industry has solely on Sarasota County. A number of broader based comments are included within our analysis due to two highly interrelated factors. First, the magnitude of the geographic, environmental, economic, political and social impacts of the Central Florida phosphate industry or any industry which mines non-renewable natural resources (e.g. oil, gas, coal, bauxite, phosphate and iron) cannot be confined to the locality within which the physical mining actually occurs. Second, Sarasota County is affected by the policies and actions embraced by those outside of its area of legislative authority. West Central Florida watersheds and airsheds, for example, recognize only air-pressure and land gradients rather than county line markers when transporting the acids, flourides, and radioactive contaminants produced by the Central Florida phosphate industry.

1. SINCE THE EXISTING ECONOMIC FIBER OF SARASOTA COUNTY IS BASED PRIMARILY UPON MAINTAINING THE ENVIRONMENTAL QUALITY OF THE AREA, THE LEGISLATIVE LEADERSHIP OF SARASOTA COUNTY HAS BEEN TOTALLY COMMITTED TO THE PRESERVATION AND CONSERVATION OF THAT ENVIRONMENT. This commitment is documented, in part, by the

following ordinances, resolutions, and research which have been or will soon be enacted by the Board of County Commissioners:

Ordinance No. 72-37 addresses the control and regulation of air and water pollution throughout Sarasota County providing for stricter, more extensive, and more stringent regulation of pollution than provided for by the State of Florida. (Adopted 9/19/72).

Ordinance No. 72-83 determines that the unregulated mining of phosphate and other similar and related minerals has a detrimental effect on the health, welfare and property rights of the citizen of Sarasota County, and providing for regulation of phosphate and similar mining processes and the reclamation of lands used in mining. (Adopted 10/17/72).

Ordinance No. 73-18 relates to the conservation of water during emergency drought conditions and authorizes the Board of County Commissioners to limit water use in case of emergency. (Adopted 6/26/73).

Ordinance No. 75-38 establishes zoning regulations for unincorporated Sarasota County replacing earlier zoning regulations and provides for open use conservation districts and marine park districts. (Adopted 10/7/75).

Ordinance No. 75-47 authorizes the expenditure of public funds for the protection of the natural resources and scenic beauty of Sarasota County and for the abatement of air and water pollution which may result from existing, pending and proposed phosphate mining projects. (Adopted 1/6/76).

Ordinance No. 76-40 amends Ordinance No. 74-33 and provides subdivision regulations for unincorporated Sarasota County. (Adopted 6/22/76).

Ordinance No. 78-13 determines the environmental importance of trees and prohibits the removal of protected trees without a permit. (Adopted 5/23/78).

Ordinance No. 78-18 expresses doubt as to adequacies of available water supplies to support existing and proposed growth in the Sarasota County area and the surrounding region, provides for a six-month deferral of all rezoning applications which would increase water supply demands, and authorizes an intensive study of water supplies. (Adopted 3/7/78).

Ordinance No. 78-53 regulates borrow pits and other excavations in unincorporated Sarasota County. (Adopted 6/6/78).

Ordinance No. 78-55 relates to endangered lands, provides for the establishment of an Endangered Lands Advisory Board to make recommendations to the Board of County Commissioners concerning the identification, protection, preservation, enhancement and management of endangered lands. (Adopted 6/13/78).

Resolution 72-9 authorizes the Sarasota County Attorney to take all necessary action to participate, join, or intervene in the State of Florida's litigation against Cities Service Company in reference to phosphate pollution of the Peace River. (Adopted 1/18/72).

Resolution No. 73-38 pledges support to the Red Flag Charrette's Plan to identify, inventory, and evaluate the existing natural and human resources of Sarasota County. (Adopted 2/13/73).

Resolution 73-171 determines the importance of the Gulf of Mexico to marine life, tourism, and conservation and requests the U. S. Department of the Interior not to grant leases for offshore oil drilling. (Adopted 10/14/73).

Resolution 73-235 endorses the Tampa Bay Regional Planning Council's Water Quality Management Plan. (Adopted 11/8/73).

Resolution 74-67 adopts amendments to the Sarasota County Comprehensive Plan including Environmental Limitations I. (Adopted 4/2/74).

Resolution 74-83 prohibits the use of water for out-of-door residential use during emergency drought conditions. (Adopted 5/2/74).

Resolution 74-84 requests the cooperation of the municipalities within Sarasota County as well as surrounding counties in instituting water conservation measures. (Adopted 5/2/74).

Resolution 74-86 determines that an emergency drought condition exists, declares Sarasota County an emergency drought area, and restricts the use of water. (Adopted 5/7/74).

Resolution 74-235 indicates intent to join with other units of government in Southwest Florida to develop a "208" plan pursuant to the Federal Water Pollution Control Act Amendment of 1972. (Adopted 12/10/74).

Resolution 75-44 adopts the Sarasota County Land Use Plan as an amendment to the Sarasota County Comprehensive Plan including the following policies:

> Policy 10 - Full consideration should be given environmental factors within Sarasota County as they pertain to land use.
>
> > C. Land and waters determined by the Environmental Element to be of general environmental value should be conserved, while those lands and waters determined to be specific critical value should be preserved.

Resolution 72-9 authorizes the Sarasota County Attorney to take all necessary action to participate, join, or intervene in the State of Florida's litigation against Cities Service Company in reference to phosphate pollution of the Peace River. (Adopted 1/18/72).

Resolution No. 73-38 pledges support to the Red Flag Charrette's Plan to identify, inventory, and evaluate the existing natural and human resources of Sarasota County. (Adopted 2/13/73).

Resolution 73-171 determines the importance of the Gulf of Mexico to marine life, tourism, and conservation and requests the U. S. Department of the Interior not to grant leases for offshore oil drilling. (Adopted 10/14/73).

Resolution 73-235 endorses the Tampa Bay Regional Planning Council's Water Quality Management Plan. (Adopted 11/8/73).

Resolution 74-67 adopts amendments to the Sarasota County Comprehensive Plan including Environmental Limitations I. (Adopted 4/2/74).

Resolution 74-83 prohibits the use of water for out-of-door residential use during emergency drought conditions. (Adopted 5/2/74).

Resolution 74-84 requests the cooperation of the municipalities within Sarasota County as well as surrounding counties in instituting water conservation measures. (Adopted 5/2/74).

Resolution 74-86 determines that an emergency drought condition exists, declares Sarasota County an emergency drought area, and restricts the use of water. (Adopted 5/7/74).

Resolution 74-235 indicates intent to join with other units of government in Southwest Florida to develop a "208" plan pursuant to the Federal Water Pollution Control Act Amendment of 1972. (Adopted 12/10/74).

Resolution 75-44 adopts the Sarasota County Land Use Plan as an amendment to the Sarasota County Comprehensive Plan including the following policies:

> Policy 10 - Full consideration should be given environmental factors within Sarasota County as they pertain to land use.
>
> > C. Land and waters determined by the Environmental Element to be of general environmental value should be conserved, while those lands and waters determined to be specific critical value should be preserved.

Policy 11. Recognizing Agriculture as an important and necessary activity within Florida and Sarasota County, adequate and appropriate land should be reserved for its continuance. (Adopted 3/13/75).

Resolution 75-211 endorses the Charlotte Harbor Ecosystem Complex as an Area of Critical State Concern under Chapter 380 Florida Statutes. (Adopted 10/14/75).

Resolution 75-223 requests all federal, state, and local agencies and departments to adopt a moratorium on all actions which would facilitate the initiation of new phosphate projects until a study of the environmental, economic, and public health hazards can be completed and analyzed. (Adopted 10/14/75).

Resolution 75-274 recommends that Congressman L. A. "Skip" Bafalis introduce legislation in the United States Congress to designate the Myakka River as a Wild and Scenic River. (Adopted 12/16/75).

Resolution 77-51 accepts the concepts and recommendations contained in a 201 Facilities Plan prepared for Sarasota County. (Adopted 2/8/77).

Resolution 77-155 requests the Region IV, EPA Administrator to determine that the Beker Phosphate mining project in Manatee County be processed as a new pollution source requiring an EIS. (Adopted 8/9/77).

Resolution 77-165 urges the U. S. Environmental Protection Agency to adopt new source standards as applicable to phosphate rock mining in accordance with Section 306(b) of the Federal Water Pollution Control Act. (Adopted 9/16/77).

Resolution 77-198 urges the Manatee County Commission not to approve the W. R. Grace "Four Corners" phosphate mining project, and to approve no more phosphate mining projects until completion of:

1) The United States Enviornmental Protection Agency Environmental Impact Study (EIS) and the adoption of any regulations called for in the EIS;

2) All EIS's required under the National Environmental Policy Act for approved phosphate mining projects in Manatee County; and

3) All approved permitting of at least one approved phosphate mine in Manatee County together with a complete assessment of the mining experience of such a project. (Adopted 10/4/77).

Resolution 77-208 establishes a joint citizens Energy Advisory Board to determine the implementation of the National Energy Conservation Program and State Energy Laws. (Adopted 10/11/77).

Resolution 77-236 determines the need for protection against significant degradation of air quality and urges the Florida Environmental Regulation Commission to adopt the proposed revisions of the Significant Deterioration Rule, Section 17-2.02 and 17-2.03(b), Florida Administrative Code with certain modification including:

1) Class I designation be applied to the entire State of Florida; or

2) As a minimum Class I designation be applied to Sarasota County.

(Adopted 11/29/77).

Resolution 78-10 requests the Southwest Florida Water Management District to complete a study identifying dependable long-term sources of water for public, agricultural, and industrial use. (Adopted 1/24/78).

Resolution 78-59 establishes an energy policy for Sarasota County. (Adopted 3/21/78).

Resolution 78-73 adopts the Overall Economic Development Program for Sarasota County including the following objective:

> Objective 1 - Ensure the conservation of those natural resources which are non-renewable and which represent the foundation of the County's retirement and recreation oriented economy.

(Adopted 4/11/78).

Resolution 78-100 authorizes a cost/benefit analysis be performed by the University of Florida as recommended by the Department of Planning's report, The Growth Management Concept and a Description of Specific Techniques. (Adopted 5/23/78).

December 9, 1975, Sarasota County Department of Planning authorized to draft an ordinance relating to stream protection and related regulations with regard to the water quality of the Myakka River.

October 25, 1977, Sarasota County Department of Planning authorized to draft a flood plain protection ordinance.

January 17, 1978, Funding authorized for joint University of Florida - Sarasota County Special Issues Project to study energy flow and growth management.

2. FOUR SPECIFIC IMPACTS IDENTIFIED BY THE EIS ARE NOT ADEQUATELY MITIGATED BY THE PROPOSED ACTION AND ACCORDINGLY CONFLICT WITH COUNTY GOALS AND OBJECTIVES.

   A. Land surface will be altered by surface mining and reclamation; soils and vegetation removed from the mining and associated areas; wildlife habitat and populations reduced; and there will be potential adverse impacts on air and water quality. W-194

   B. Recreational resources will be reduced, archeologic values may be destroyed and esthetic aspects will change.

   C. Redistribution of radionuclides, which result in an increase of human exposure, will occur.

   D. The quantity of available groundwater will be reduced.

W-195

The primary shortcoming of the environmental modifications proposed by the EIS is their limited application to only new source phosphate operations.

Alterations caused by mining to the land surface are not mitigated in any manner by the Proposed Action because it assumes the continued permitting of all new mines as proposed by the industry's Scenario (2.11'). The modifications proposed to mitigate the environmental impact of slime ponds may have some effect on the reduction of reclamation time, however, it is only applied to new sources, thus allowing existing operations to persist in the use of above surface slime ponds. Allowing the creation of new slime ponds increases the potential threat to surface water systems. W-196

Specific reference is made to mitigating effects of phosphate operations on wetlands (Scenario 2.14). However, even if mining is prohibited in wetlands because of their identified value as wildlife habits as well as their general aesthetic and ecological importance to the region, increased mining permitted in the vicinity of protected wetlands is bound to have a negative impact upon their existence. W-197

An important limitation relating to the mitigating effects of the Proposed Action as related to air and water quality and the increase of human exposure to radiation is that these apply only to new source chemical plants, none of which are anticipated during the period addressed by the EIS. Thus, the Proposed Action will have virtually no mitigating effect upon these impacts. W-198

Finally, the Proposed Action concludes that the impact on water quantity will be minimized because of the requirement to retain a 25 year-24 hour rainfall storm event. However, the model used to evaluate future water demands assumes that municipal and agricultural demands will remain at 1975 levels. This rationale does not appear to provide an accurate assessment of the impact of the W-199

Proposed Action on future groundwater supplies in the region. Therefore, the failure of the proposed action to adequately mitigate these adverse environmental impacts conflicts with many of the previously cited goals, policies, plans and programs of Sarasota County included in the following:

Ordinance No. 72-37
Ordinance No. 72-83
Ordinance No. 73-18
Ordinance No. 75-47
Ordinance No. 78-13
Ordinance No. 78-18
Ordinance No. 78-55

Resolution No. 72-9
Resolution No. 74-83
Resolution No. 74-84
Resolution No. 74-86
Resolution No. 75-44
Resolution No. 75-233
Resolution No. 75-274
Resolution No. 77-155
Resolution No. 77-165
Resolution No. 77-198
Resolution No. 77-236
Resolution No. 78-10
Resolution No. 78-73

3. THE IMPACT OF PHOSPHATE MINING ON THE MYAKKA RIVER IS NOT ADDRESSED BY THE DRAFT EIS: INDEED, IT IS HARDLY MENTIONED.

W-200

The failure of the Draft EIS to address the potential impact of phosphate mining upon the Myakka River and its flood plain is of special concern. Both the adopted Sarasota County Land Use Plan and Environmental Limitation I have identified the Myakka River System as a conservation and preservation area. Numerous reports have indicated that the Myakka River System serves as a habitat for endangered species and is a potential source of potable water. The national, as well as regional, significance of the Myakka has been recognized by United States House of Representatives, Committee on Interior and Insular Affairs which is considering including the river for study as a potential part of the Federal Wild and Scenic River Program.

Since several of the phosphate mines included in Scenario 2.11 and the Proposed Action of the Draft EIS plan to mine within the Myakka's watershed, the failure of the Draft EIS to address the impact of mining upon the Myakka River is a severe oversight.

4. THE DRAFT EIS SHOULD ADDRESS THE LONG TERM ECONOMIC IMPACT OF THE RAPID DEPLETION OF DOMESTIC SUPPLIES OF PHOSPHATE. Lessons of recent history should not be ignored. The petroleum crises of 1974 and the continuing OPEC manipulations on the price of oil imported by the United States should alert us to the danger of becoming dependent upon a foreign cartel for as vital a resource as phosphate. In 1976, the activities of the Central Florida phosphate area accounted for thirty-three percent of world production. However, current Florida phosphate reserves are less than six percent of the measured economically recoverable world reserves and the estimated sub-economic phosphate resources in Florida are only two percent of the world total.

W-201

The implications of the above statistics are ominous. As stated in the Draft EIS, the United States demand for phosphate "would likely exceed domestic supply before the year 2010.[1]" The rapid depletion of the Central Florida phosphate supplies resulting in dependence upon foreign supplies of phosphate to sustain agricultural production could have profound, adverse economic and environmental impacts upon not only this region, but the entire nation. The failure of the Draft EIS to address these long-term impacts of expanded mining activity is in conflict with the development policy of Sarasota County (Policy 11 of the Land Use Plan) and should be addressed as a major national policy question, as well. Proper attention to the economic impact of the rapid depletion of domestic phosphate supplies might well support a limitation on the expansion of mining activity and the development of a national policy regulating the export of this strategically valuable and finite natural resource.

5. THE DRAFT EIS & ITS PROPOSED ACTION OMIT PROPOSED MINING ACTIVITIES WHICH WILL ADD TO THE CUMMULATIVE IMPACT OF THE INDUSTRY. The Proposed Action assesses the effects of only those phosphate mining and processing activities permitted prior to August 1, 1976 (Scenario 2.19) and those mines for which DRI applications had been made prior to August 1, 1976 (Scenario 2.11). There are at least thirteen additional mine proposals identified by the phosphate industry's view (2.11') but these mines are not incorporated into Scenario 2.11, except, apparently, only to assess the effects that future mining will have on water quantity. The impact of such expected expansion by the phosphate industry (i.e., "the industry's view", 2.11') is not fully assessed. Although the Proposed Action suggests a number of process modifications for new sources, the mitigating effects of such measures cannot be adequately assessed unless all potentially new sources are included. The findings of the EIS are incomplete regarding the long term effect of phosphate activities on the region. W-202

---

[1] U.S. Environmental Protection Agency, Draft Areawide Environmental Impact Statement - Central Florida Phosphate Industry (Atlanta, Ga.: U.S. Environmental Protection Agency, Region IV, 1978) p.ii.

6. THE CUMMULATIVE IMPACT OF DEGRADATION OF WATER QUALITY AND OF INCREASED RADIATION SHOULD RECEIVE FURTHER ATTENTION IN THE DRAFT EIS AND BE FOCUSED UPON BY ANY SUBSEQUENT SITE SPECIFIC EIS. The effects of the phosphate industry on water quality is almost ignored in the EIS as drafted. Suggested improvements are limited to a modification of slime disposal procedures and recommended reductions in effluent concentrations for new source chemical plants. It is the contention of the authors of the Draft EIS that EPA "has no direct legal authority to change requirements for existing sources". Even if it were assumed that this statement were correct, the Draft EIS should address the communitative impact of the industry on radiation exposure and water quality in order to enable the appropriate federal, state and local governmental authorities to determine whether additional legal authority should be granted over existing sources. W-203

The EIS lists four potential pathways for secondary impacts of radiation exposures:

> Air contamination by radionuclides associated with dust created when dry phosphate rock and phosphate products are transferred
>
> Possible contamination of ground waters by seepage of process waters at the chemical plants and slime-pond waters in the mine areas
>
> Radon-222 daughter-product contamination of air in structures built on land previously mined by the industry
>
> Consumption of foods (crop foods or beef) produced on reclaimed land[2]

However, on page 2.64 of the Draft EIS, it is stated that

> Quantifying impacts on the general population by exposure associated with the pathways just listed was considered beyond the scope of this program. W-204

In light of the failure of the Draft EIS to quantify the impacts of increased radiation exposure, the Draft EIS should clearly stress the need to quantify radiation impacts in any subsequent site-specific EIS.

---

[2] Ibid., p.2.63.

In summary, accelerated phosphate mining under the Proposed Action will increase already inflated land values, deplete non-renewable resources, and further reduce the amount of land in agricultural production. Adverse environmental damage including despoiled landscapes or incompatible land usage would unfavorably impact our multimillion dollar tourist/recreation industry. It is obvious that such impacts which are not adequately mitigated by the Draft EIS Proposed Action are not in compliance with even the broadest goals, objectives, programs and plans of our community.

Sincerely,

Douglas James

Douglas James, Director
Sarasota County Department of Planning
2086 Main Street
Sarasota, Florida 33577

DJ:DW:RD/ms

SWFRPC'S OFFICIAL RECOMMENDATIONS

AGENDA ITEM 6

CENTRAL FLORIDA PHOSPHATE EIS

(Staff Review)

The U.S. Environmental Protection Agency (EPA) has prepared and submitted a Draft Areawide Environmental Impact Statement on the Central Flordia Phosphate Industry (EIS) for state and areawide OMB A-95 Clearinghouse review. The Draft EIS analyzed the impacts associated with the Central Florida Phosphate industry under several different Scenarios or alternatives. These alternatives included the permitting of existing mining activities only (Scenario 2.15), the permitting of existing as well as New Sources (Scenario 2.11), process modifications (Scenario 2.12), required Reduced Water Usage (Scenario 2.13), and controlling activities in U.S. waters and wetlands (Scenario 2.14). The final Proposed Action alternative identified in the EIS results from the combination of Scenarios 2.11, 2.12, 2.13, and 2.14. The Proposed Action will only affect New Source operations, while allowing existing mine activities to continue in their present manner. The Council staff's review of the draft EIS Action leads to the conclusion that the selected Proposed Action will do little towards minimizing the many negative impacts associated with the phosphate industry in Central Florida. Further, the staff review finds that the proposed action does not encourage the wise management of phosphate reserves and resources of the State of Florida.

STAFF RECOMMENDATION

1) The selected Proposed Action, if adopted, should be made applicable to existing, as well as any proposed New Source, mining operations. W-205

In order to finalize the draft EIS and prior to adoption of any particular Proposed Action, the EPA should develop a new scenario based on recognition of the following criteria:

(A) The phosphate resources should be analyzed as a finite resource of national importance. As such, a new alternative should be developed on the premise that this resource should be wisely managed to insure the longest term benefit that can be provided in the following four categories: W-206

1) Stabilizing fertilizer prices;
2) Ensuring stable employment and constant levels of tax revenues;
3) Stabilizing local and regional economic activity;
4) Preventing the need to import phosphate in order to protect the nation's balance of payments.

(b) The EIS should also address the short- and long-term environmental impacts associated with this scenario. W-207

RECOMMENDED ACTION: Endorse staff review; recommend and authorize Executive Director to forward these recommendations to the appropriate agencies.

Introduction

On March 17, 1978, the United States Environmental Protection Agency (EPA) submitted a Draft Areawide Environmental Impact Statement (EIS) on the Central Florida Phosphate Industry to State and areawide OMB A-95 Clearinghouse review. The purpose of the Areawide EIS is to assess the areawide and cumulative effects of the phosphate industry and to provide the basis for developing site specific EIS's for "New Source" NPDES* mining activities (those not permitted to date).

According to the draft EIS, there are currently seventeen potential New Source mines in Polk, Hillsborough, Manatee, Hardee and Desoto Counties. The study area identified in the EIS includes those counties indicated above, as well as Sarasota and Charlotte Counties. Although no mining activities are identified or proposed in Sarasota and Charlotte Counties, these counties were modeled because phosphate recovery practices will have an impact on their water quantity and quality.

According to the EIS, there are approximately 2500 million metric (short) tons of economically recoverable phosphate ore in the U.S. or approximately 14% of the world reserve supply. In the Central Florida Phosphate District, economically recoverable reserves are estimated at 1,037 million metric (short) tons or approximately 41% of the U.S. supply and 6% of the world supply. The document also notes that in 1976, U.S. phosphate production accounted for 41% of the world's production. The Central Florida district by itself produced 80% of the United State's production and 33% of the world production. The EIS indicates that National levels of production are expected to increase with the Central Florida Phosphate District represented as a major contributor to this production.

The major impacts resulting from existing and continued phosphate mining in Central Florida are:

(a) Land surface will be altered by surface mining and reclamation; soils and vegetation will be removed from the mining and associated areas; wildlife habitat and populations will be reduced; and there will be potential adverse impacts on air and water quality.

(b) Livestock forage will be reduced during mining operations, and productivity of the mining area will be reduced even after reclamation.

(c) Population and employment in the Region will increase, but the socioeconomic infrastructure will receive stress.

(d) Recreational resources will be reduced, archeologic sites may be destroyed, and esthetic aspects will change.

---

*National Pollution Discharge Elimination System (NPDES)

(e) Redistribution of radionuclides, which result in an increase of human exposure, will occur.

(f) The quantity of available groundwater will be reduced.

(g) There will be an irrevocable commitement of resources, including phosphorus and fossil fuel.*

Given the potential for 17 New Source mines and the observed effect of existing mining activities, the draft EIS considered the impact of the phosphate mining industry under various scenarios. These included: limiting mining to those operations currently permitted (Scenario 2.15), continuing the operation of existing mines as well as future "New Source" operations (Scenario 2.11), requiring process modification for "New Sources" (Scenario 2.12), requiring reduced water usage (Scenario 2.13), and controlling activities in the waters of the U.S. and in the wetlands of Central Florida (Scenario 2.14). In the following portions of this review, two different scenarios are discussed. These are the "no growth" scenario based on no new permits, and the "recommended" scenario, which is a combination of several alternatives.

Scenario 2.15 (Existing Source Permits Only) Alternative

In the draft Areawide EIS, impacts of the Central Florida Phosphate industry under Scenario 2.15 (continued operations of mines permitted as of August 1, 1976) was discussed first. In this scenario, 18 mines and 15 processing plants would continue to operate, mining approximately 80.6 thousand acres between 1977 and 2000.** During this period, approximately 593 million metric (short) tons of phosphate ore would be mined, which is approximately 57% of the estimated economically recoverable reserves of the district.*** This mining activity also represents the consumption of 34% of the area's known phosphate ore resources.

Water demands upon the Floridan Aquifer generated by the industry under Scenario 2.15 are estimated to total 355.2 mgd in 1985 and 195.77 mgd in the year 2000.**** Based on the assumptions that the phosphate industry's water demands would rise and fall during the 1977-2000 production period and that municipal and agricultural demands would remain at 1975 levels, the EIS indicated that the aquifer's pressure gradients will increase in a south and Southwesterly direction. As a result of this increase, the freshwater head near the coastal sections would also increase, thereby reducing

---

*Draft Areawide EIA, p.ii.
**Ibid., p. 2.40
***Ibid., Table 2.15, p. 2.79
****Ibid., Table 2.3, p. 2.12

the potential for saltwater intrusion and restoring coastal well capacities.* These conclusions contained on pages 2.65 and 2.66 of the EIS should be considered somewhat misleading, primarily due to the assumption of the municipal and agricultural water demands will remain equivalent to the 1975 demands. The EIS recognizes this fact, as noted on page 2.46, but continues to describe the positive and negative impacts on the Aquifer in its analysis of Scenario 2.11 (the continued operation of existing mines and the permitting of New Source mines).

Scenario 2.15 also indicates that 13,700 acres of wetlands will be destroyed between the years 1977 and 2000 and the overall disturbance of approximately 80,600 acres will impact surface and sub-terranium flows to the river basins in the district area. For example, the EIS indicates that between the years 1977 to 2000, approximately 48,300 acres, 3,500 acres, and 24,800 acres will be altered in the Upper Peace River, Little Manatee and Alfia River Basins, respectively.** The document notes that the impact will be of sufficient magnitude to cause notable community shift for organisms preferring flowing water to those preferring standing water. This represents a significant negative impact since flowing-water communities are of greater resource value to the study area.*** Additionally, the altered flow regimes resulting from mining and reduced surface runoff will cause changes in freshwater discharges to principally the Peace and Alfia Rivers. Reduced freshwater discharges to these rivers and their receiving coastal estuaries, will alter salinity regimes, causing modifications to the estuarine organism distribution, food cycles, etc.

Finally, under Scenario 2.15, the EIS notes that both surface and groundwater quality will be negatively impacted. Although radioactivity concentrations are not expected to increase significantly, the following effects are expected:

(a) There will be combined loadings of chemical pollutional parameters (especially phosphates, flourides, and total suspended solids) from discharges of nonprocessed and processed wastewaters to various stream segments,

(b) The creation of many water impoundments that will tend to deteriorate water quality by permitting over enrichment,

(c) Local surface-water deterioration from clearing, burning, construction, reclamation, slime spills, and seepage from contaminated ponds will occur,

(d) There will be local water-table quality deterioration because of draining and dewatering, overburden, product storage, seepage from contaminated ponds, and reclamation of mining pits, and

---

* Ibid., p. 2.56
** Ibid., p. 2.56
** Ibid.

(e) There will be local Floridan Aquifer water-quality deterioration from wastewater injection.*

Since Scenario 2.15 involves only the continued operation of those mining activities which are currently permitted, it was not adopted as the proposed course of action. There has been considerable demand by phosphate interests for additional mines for future activities. Consequently, the draft EIS seeks to find a compromise between the industry demands (known as Scenario 2.11) and environmental impacts through process modifications (Scenario 2.12), reducing water usage (Scenario 2.13) and controlling activities in U.S. waters and wetlands (Scenario 2.14). So in essence, the proposed action identified in the EIS involves the continued operations of existing phosphate operations and the permitting of New Sources as modified by Scenarios 2.12, 2.13, and 2.14.

The Proposed Action (Scenario 2.11, 2.12, 2.13, 2.14)

Scenario 2.11 (Permit Existing and New Sources)

Scenario 2.11 is based on the operation of existing and the permitting of New Sources. Under this alternative, not only will 18 mines and 15 processing plants continue to operate but 7 additional mines are anticipated to commence operation within the time frame examined in the EIS. However, most of the impacts addressed in this scenario are analyzed from an additional Scenario 2.11'* standpoint (the industry view) which requests that 12 new mines would be permitted.

According to Scenario 2.11, an additional 58,500 acres of land would be disturbed between 1977 and 2000. This represents a 72.6% increase over land disturbance created by mining operations currently authorized under Scenario 2.15. (This differs from the industry's Scenario 2.11' which would result in an additional 103,700 acres mined or a 129% increase over Scenario 2.15 conditions.)** An additional 29,300 acres would be committed for slime ponds under Scenario 2.11 (as compared to 51,600 acres for Scenario 2.11'). Over 26,800 acres of wetlands would be altered under Scenario 2.11***, while the loss of forest (timber) resources would amount to an additional 18,300 acres by the year 2000, representing an increase over Scenario 2.15 losses by 53%.**** (Scenario 2.11' would result in a 67% increase in forest acreage disturbance.)

Phosphate consumption would increase by 72% over Scenario 2.15 levels, totalling approximately 1,020 million metric (short) tons by the year 2000.***** This volume of production represents 98% of the economical recoverable reserves and 59.2% of the known areawide resources. (In comparison, Scenario 2.11' would result in phosphate production of 1,350 million metric (short) tons by 2000 or a 126% increase over anticipated existing permitted mine production. In relation to area reserves and resources, scenario

---

* Ibid., p. 2.70

** Ibid., p. 2.69

*** Ibid., p. 2.72

**** Ibid., p. 2.78

***** Ibid., p. 2.79

2.11' will utilize over 130% of the district's economically recoverable reserves and 78.5% of the known resources.) The production discussed under Scenario 2.11 will result in the mining of 40.8% of the U.S. reserves and 14.5% of the countries estimated resources.

In assessing the water demands of the phosphate industry on the Floridan Aquifer, the EIS assumed worst case conditions, that of the industry view (Scenario 2.11'). Based on the results of the model which assumed municipal and agricultural demands would maintain 1975 demand levels, the phosphate industry will impact the potentiometric levels in the Floridan Aquifer, particularly the coastal areas of Manatee, Sarasota and Charlotte Counties. However, by the year 2000, the EIS notes that "no adverse effects except the small increase in pumping costs and the increased potential for saltwater incroachment are expected from future pumping of the Floridan Aquifer by the phosphate industry."* This statement demonstrates a rather narrow scope of impact evaluation; particularly since the Municipal/agricultural demands were held constant and that the increased potential for saltwater intrusion could be expected to represent a major negative impact on populations residing in coastal areas.

Water quality implications are significant. According to the EIS, under the conditions of Scenario 2.11, the potential for pollution loads from failures of slime-pond dikes will increase and would threaten Class I waters. It should also be restated that phosphate operations under Scenario 2.11 (and 2.11') would increase slime pond acreage 72.6% and 129% over currently permitted conditions. This projected expansion of slime pond areas will significantly increase the likelihood of slime pond dike failure. .

Within the context of Scenario 2.11, Scenario 2.12 (Require Process Modifications for New Sources), 2.13 (Required Reduced Water Usage), and Scenario 2.14 (Control Activities in Waters of U.S. and Wetlands) were considered and constitute those remaining elements comprising the Proposed Action.

Scenario 2.12 (Require Process Modification for New Sources)

There are six major modifications discussed for the permitting of New Sources

(A) Elimination of Slime Ponds

Under this consideration, elimination of slime ponds was analyzed from two major approaches. The first approach discussed involved the changing of the mining process from a wet to dry procedure. The discussion contained in the draft EIS concluded that technical problems would make a dry mining process infeasible within the 1977-2000 study period.** The second approach towards eliminating slime ponds dealt mainly with procedures to speed up the dewatering and settling process in these slime pits. Flocculation of the slime areas and/or combining sand tailings and slimes to fill mine cuts were the basic procedures addressed.* This could reduce reclamation time for such pits. This modification is the recommended use, which would allow pond usage to continue along with the potential for disasterous spills. Flocculation is only proposed for New Sources, enabling existing sources to continue current methods of operation.

---

*Ibid., p. 2.83

**Ibid., p. 2.80

(B) Chemical Processing of Wet Rock (Eliminating drying process)

Under this consideration, the dry-rock processing method would be eliminated, thereby reducing released dust and air pollution.** Wet rock grinding during beneficiation and chemical processing is already in use at several plants. Furthermore, this process modification only applies to New Source activities. Consequently, existing dry rock processing will be permitted to continue, thereby sustaining current dust and air pollution.

(C) Dry Conveyor for Matrix from Mine to Benefication Plant

The process described in the EIS entails the use of a mined rock transportation system comprised of an overland conveyor belt.*** According to this document, the system utilizes less water and energy to take the mined ore to beneficiation sites. Most existing operations utilized slurry pipes to transport the ore and will be permitted to continue this procedure. Consequently, energy and water demands would appear to remain constant within the foreseeable future.

(D) Recovery of Fluoride from Recirculated Process Water, Including Scrubber Water

The EIS describes a Fluoride recovery system utilized by USS Agri-Chemical and W.R. Grace phosphate companies. Numerous problems were sited in the description and report costs of Fluoride recovery operations exceed prices by 25 to 36 percent.**** In addition, this requirement would only be applied to New Sources and only if market conditions offset the cost of recovery. Meanwhile, existing source fluoride emissions will continue.

(E) Uranium Recovery from All Phosphoric Acid

This consideration basically involves the process of extracting Uranium (U_3O_8) during initial digesting of phosphate rock, using sulfuric acid at chemical processing plants. The digesting process creates phosphoric acid and gypsum, the gypsum being a radioactive waste product separated during the process.

---

*Ibid., 2.19
**Ibid., 2.11
***Ibid., 2.11 - 2.13
****Ibid., 2.23 - 2.25

Currently, uranium extraction from phosphoric acid is being conducted by several Central Florida Chemical processing plants (W. R. Grace, Bartow complex, Uranium Recovery Corporation, and IMC's complex at Mulberry, Florida). According to the EIS, if uranium extraction was conducted at 90 to 95% efficiency [illegible] phosphoric acid chemical treatment plants in Central Florida, approximately 4,570,000 pounds of uranium could be produced a year.* However, this process modification would only be encouraged for New Source activities.

(F) Impervious Lining for Recirculated Process-Water Ponds at Chemical Plants

This consideration involves the lining of gyp-ponds at chemical processing plants with an impervious material in order to reduce ground water quality degradation. According to the EIS, operational and cost data are not available for this consideration, since it has never been tried. Furthermore, little data was available to determine the impacts of seepage from these gyp-ponds and therefore, the net benefit from installing impervious linings was not ascertained.** This process modification is only directed to New Source activities and since no new chemical processing plants were considered in the EIS, this modification is of little use.

Scenario 2.13 (Required Reduced Water Usage)

This scenario basically describes the reduction of water usage through the requirement that stormwater drainage systems accommodate a 25 year-24 hour rainfall storm event. This requirement would only be imposed on New Source activities.*** Existing mining operations will be permitted to maintain their 10-year storm event drainage systems. The water volumes contained in the enlarged drainage system (storage ponds) could be utilized in the mining and processing of the phosphate ore, resulting in reduced groundwater withdrawals. However, it must be noted that the scenario would further reduce surface water flows towards wetlands, streams, and river basins, ultimately reducing river flows. This process modification would appear to magnify one of the major negative impacts associated with the phosphate industry.

Scenario 2.14 (Control Activities in Waters of U.S. and Wetlands)

Under this scenario, prohibition of mining in U.S. waters and wetlands was considered. Also considered was authorizing mining activities in wetland areas, but only if restoration was a requirement after mining.

Some major points were established in this scenario. First, the Army Corps of Engineers and the Florida Department of Environmental

---

*Ibid., p. 2.25 - 2.26

**Ibid., p. 2.27

***Ibid.

Regulation (D.E.R.) were recognized as having purview in permitting powers over U.S. waters and wetlands. Secondly, the EIS notes that even if mining in U.S. waters and wetlands were prohibited, industry actions either adjacent to or up stream of these sensitive systems would cause negative impacts by reducing surface/groundwater flows. In addition, assuming that the wetland was left undisturbed, reclamation of surrounding mined areas usually results in the lowering of original land surfaces. Consequently, the wetland becomes higher in elevation resulting in its eventual draining and destruction. The third point established was that no feasible means for restoration of a mined wetland has been demonstrated. Ever if the wetland could be restored, there appears little doubt that its original characteristics, productivity and habitat features could ever be duplicated.

Conclusions

Based on the foregoing analyses of the Proposed Action comprised of Scenario 2.11, 2.12, 2.13, and 2.14, it is apparent that the phosphate industry will be required to do little toward minimizing impacts associated with existing operations or New Source activities. This fact is emphasized since the draft EIS is based upon issuing all requested permits with only a few modifications in technology or site design.

Elimination of above ground slime-ponds is considered in the report to be technologically infeasible within the study period 1977-2000. Although requiring New Sources to speed up the slime-pond reclamation through flocculation and/or combining tailings with slimes would prove useful, the reclaimed lands would still be relegated to limited agricultural uses. Further, the threat of slime-pond dike failure will increase in proportion to the new ponds created; thereby magnifying potential disasters to natural water bodies and river basins.

Elimination of dry rock processing methods at beneficiation sites and chemical processing plants is a modification only applicable to New Source activities. While this modification should serve to improve air quality around New Sources, areas adjacent to existing activities will continue to be impacted.

The dry conveyor transporting of phosphate ore from mines and beneficiati plants would only be required for New Sources. As a result, the water and energy demands for permitted activities using slurry pipe transportation will remain constant, within the foreseeable future.

Recovery of fluorides from recirculated process water, including scrubber water, has been identified as very costly. Additionally, according to the EIS, enforcement of this process modification for New Sources could be waived if market conditions do not support the cost. It seems likely the New Source applicants could demonstrate excessive costs for many years to come resulting in no enforcement of the modification. Furthermore, fluorine and fluoride emissions will continue from existing sources. Together, these two factors would seem to negate the plausability of improving environmental conditions under this modification.

Uranium recovery from all phosphoric acid is a desirable activity. Although some companies are currently undertaking this activity, the actual applicability of the modification is directed towards New Sources; and only to the extent of encouragement.

The lining of gyp-ponds with impervious materials appears to be a desirable procedure for reducing ground and surface water contamination. However, the EIS notes the operational and cost data is not available since it has not been tried. In addition, since it has not been tried, no net benefit data is available. Furthermore, this process modification is only applicable to New Source chemical plants, none of which are envisioned in the draft EIS.

Reduced water usage through expanding drainage capacities for a 25-year-24-hour storm event and utilizing the contained water for ore processing would appear reasonable. However, this modification would only apply to New Sources. Furthermore, through increased detention times and capacities, surface water flows to streams and river basins will be reduced. Consequently, the modification would serve to compound the flow regime impacts already associated with the phosphate industry.

Proposals identified in the draft EIS to control activities in U.S. waters and wetlands appear to lead to one central conclusion; phosphate industry activities will create significant negative impacts on these aquatic environments. Even if mining in U.S. waters and/or wetlands is prohibited, mining operations within the vicinity of these environments will reduce surface water flows and deplete groundwater systems, thus changing, if not destroying, the waters and wetlands. If mining was authorized in wetlands on the basis of requiring restoration, a pilot project in restoration would be necessary in order to adequately assess its feasibility since it has never before been undertaken.

Finally, it is important to discuss that the justifications of the Proposed Action are the positive benefits as identified in Section 5 of the draft Areawide EIS. According to the EIS, the positive benefits of the Proposed Action include:

(1) low priced fertilizer
(2) employment and tax revenues
(3) local and regional economic activity
(4) reduction in U.S. trade deficits

W-208

However, none of the scenarios were designed around these benefits, but these benefits are used to justify the Proposed Action alternative. It is recommended that an additional alternative should be developed that would be based on maximizing these benefits from a long-term viewpoint. Environmental Impacts associated with this new alternative should then be discussed and explored. It should be emphaiszed that the Proposed Action alternative indicated in the EIS is totally deficient in identifying the long-term economic benefits by the parameters above. This fact is demonstrated in the following discussion.

(1) Low priced fertilizer: It may be assumed that fertilizer produced in this part of Florida is competitive with the cost of developing phosphate resources elsewhere. The selected Proposed Action would result in increased production and, thereby, more rapidly decrease reserves. This would, perhaps, increase the

amount of available low-priced fertilizer for a short period of time. However, as local reserves are exhausted, higher priced reserves elsewhere will need to be developed. Consequently, rapid exhaustion of local reserves will only lead to increased fertilizer prices. An additional alternative maintining current level of production should be examined for its ability to keep local low priced fertilizers on the market for a longer period of time.

(2) Employment and Tax Revenues: The selected Proposed Action encourages increased employment for a short period of time, to be followed by an increasing number of layoffs in the labor force. This cannot be considered a long-term economic benefit. An additional alternative should be developed that examines (as in the case of fertilizer) the feasibility of maintaining current levels of employment for a longer period. Similarly, tax revenues, under the EIS selected alternative, can be expected to initially increase (which is necessary for the additional governmental facilities needed by the phosphate industry), and thereafter decline as workers are laid off. This decline in revenues will occur during the period when governmental social service expenditures will need to increase in order to accommodate the newly-unemployed phosphate workers. The new alternative suggested as a result of this review should examine a level of phosphate production that would maintain current tax revenues as long as possible.

(3) Local and Regional Economic Activity: As discussed above, other business and governmental operations, (i.e., Port of Tampa) will need to gear up for increased phosphate industry operations; and, therefore, can be expected to decline as the industry declines. This cannot be considered a long-term benefit. A suggested alternative would be to examine the feasibility of maintaining phosphate operation levels within the current framework of business in order to postpone and/or reduce future adverse impacts as industry shuts down.

(4) Reduction in U.S. Trade Deficits: This is a very temporary benefit that will be followed by an increase in deficits as the nation's reserves are used up. The EIS indicates that U.S. demand will exceed Florida's production about 1990 and will exceed U.S. production about the year 2008. After this point, more expensive foreign resources will be needed to meet U.S. demand. The suggested alternative would be to examine the benefits of long-term self-sufficiency in phosphates. This is particularly important since the nation is an exporter of agricultural goods. It should be noted that the EIS does not provide fiscal data on the sale of phosphate as an element of our trade balance.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTH FLORIDA DISTRICT
BRANCH OFFICE AND LABORATORY
3201 GOLF COURSE BOULEVARD
PUNTA GORDA, FLORIDA 33950

REUBIN O'D. ASKEW
GOVERNOR

JOSEPH W. LANDERS, JR.
SECRETARY

PHILIP R. EDWARDS
DISTRICT MANAGER

June 21, 1978

Mr. R. E. McNeill
U.S.E.P.A., Region VI
345 Courtland St., N.E.
Atlanta, Georgia

Re: Draft Areawide EIS Central
Florida Phosphate Industry

Dear Mr McNeill:

After reviewing the draft E.I.S., the technical working paper on aquatic biota (Vol V, Section 2), and attending the public hearing, I am disappointed as to the lack of biological data which were presented for the fresh water aquatic systems of the study area. In an attempt to improve both the quality and quanity of data available, I am submitting species lists of the macroinvertebrate fauna from the P.N.S. samples of (1) the Peace River at Arcadia, Desoto County (25.02.0004), (2) Horse Creek at S. R. 72, Desoto County (25.02.0111) and (3) the Myakka River at Border Drive, Sarasota County (25.03.0403). W-209

These lists have been edited to reflect most recent taxonomy and to exclude erroneous identifications (primarily from the older data). All species listed were actually collected at the station location. W-210 Extensive museum specimens, water quality data and habitat preferences are maintained and recorded for the majority of species. Quantitative data ($\bar{d}$ Shannon-Weaver) from benthic grabs and artificial substrates (Hester-Dendy, E.P.A. modification) are also available. Collections other than quantitative, stress those forms which are dependent upon dissolved oxygen; thus most adult COLEOPTERA (excluding ELMIDAE) and the HEMIPTERA are not represented except from quantitative collections; in this one aspect the submitted lists are limited.

The Peace River at Arcadia is represented by 135 Taxa, dominated by aquatic insects and is based upon 85 samples (56 benthic grabs, 22 artificial substrates, 7 intersive qualitative samples). Of the W-211 aquatic insects which Lanquist (1953) recorded from the Peace River at Arcadia, four (4) ODONATA and two (2) TRICHOPTERA have not occurred in the P.N.S. sampling.

continued . . . .

ODONATA

ANISOPTERA

GOMPHIDAE

DROMOGOMPHUS Spinosus

PROGOMPHUS alachuensis

CORDULIIDAE

TETRAGONEURA sp.

ZYGOPTERA

COENAGRIONIDAE

CALOPTERYX (Agrion) *maculata*

The two GOMPHIDAE & *TETRAGONEURA* sp. are regularly collected from Horse Creek, a large tributary to the west, unaffected by historic slime spills. *CALOPTERYX* (Agrion) *maculata* is a common inhabitant of a small unnamed swamp stream tributary to the Peace River south of Arcadia. The GOMPHIDAE *HAGENIUS brevistylus* and the AESCHINIDAE *BOYERIA vinosa* while not collected by Lanquist at Arcadia are reported by him from upstream. *HAGENIUS brevistylus* is a rare member of the community at Horse Creek and *BOYERIA vinosa* is common in the same stream frequented by *CALOPTERYX* mentioned above.

TRICHOPTERA

PHILOPOTAMIDAE

CHIMARRA sp.

POLYCENTROPIDIDAE

PSYCHOMYIID *GENUS A* (=*NYCTIOPHYLAX* sp)

CHIMARRA is a occasional member of the community at Horse Creek and is also represented by a single specimen from the Myakka River but has not been recovered from the Arcadia Peace River Station to date. Lanquist does not discuss the habitat from which *CHIMARRA* was taken; however, collections of this organism at other south Florida sites (DER monitoring data) indicate a distinct preference for substantial velocity and a hard substrate (rocks or logs). Large populations of *CHIMARRA* exist to the south of the study area in the upper reaches of the Orange River, Lee County, Florida and Alligator Creek, Charlotte County Florida. Probability for collection of *CHIMARRA* would likely increase upstream in the Peace River.

PYSCOMYIID GENUS A (Ross) has been placed in the genus NYCTIOPHYLAX (Flint 1964). I have never seen this organism from the lower Peace River Basin. The nearest population which I have collected is from a small rapid stream in Highlands County.

Horse Creek is one of the largest tributaries of the Peace River drainage. Arising as the accumulation of drainage from sloughs and flatwood ponds in northeastern Manatee and northwestern Hardee Counties, the stream flows in a well defined course the entire length of western Hardee County and the majority of DeSoto County discharging to the Peace River in the vicinity of Fort Ogden. Typical of southwest Florida streams, flow is influenced by the highly seasonal rainfall. Inundation of the hardwood flood plain normally occurs at least once during the summer. Base flows occur during the spring drought months when the stream is totally dependent upon groundwater seepage. In severe droughts, segments of the stream bed dry for a short period. This condition is more pronounced closer to the streams headwaters. At this point I must caution that while there are times of no flow (spring droughts), Horse Creek cannot by anyone's imagination be called an intermittent stream and use the correct definition of the term. Even during the transient no flow period, pools along the stream bed retain water. W-212

The enclosed fauna listed for Horse Creek (S.R. 72)(152 Taxa) is based upon 157 samples (101 artificial substrates, 47 benthic grabs and 9 intensive qualitative samples). The richness of the Horse Creek fauna is an excellent documentation of the historic water quality, aquatic resources, and natural habitat diversity once common to the entire Peace River Basin. This stream represents the last large drainage of the Bone Valley formation spared the "progress" of modern phosphate mining. Serious consideration needs to be given to the establishment of a State or Federal "endangered lands" designation for a corridor encompassing the creek, contiguous wetlands, hardwood flood plains and a small amount of uplands to preserve this state and national heritage.

The Myakka River is a totally different environment from the Peace River or Horse Creek. Defined as a truly zero flow river during portions of the seasonal cycle. The Myakka River at the PNS site has a strong tidal component during the winter and spring. While the 125 Taxa approaches the number for the Peace River, Arcadia Station, 21 of these represent estuarine or brackish water forms not collected at the Peace River Station. The channel profile is similar to a box cut canal, with a steep rapid slope and very little shallows along the edge. The predominant substrate is bare limestone; sand is present only along the edges. The faunal list was developed from 83 samples (57 benthic grabs, 21 artificial substrates and 5 intensive qualitative samplings). W-213

Several inaccurate identifications and typographic errors are contained in Tables 2.11 and 2.5 of the Aquatic Biota working paper (Vol. V, Section 2). W-214

TABLE 2.11

MOLLUSCA

GASTROPODA

CREPIDULA - This is a Marine and Estuarine organism. No member of this genus belongs to the lotic freshwater community. Several of the other typical gastropoda genera are most likely also misidentifications.

EPHEMEROPTERA

NEOCLOEON (Traver) - Edmunds, Jensen and Berner (1976) relegated NEOCLOEON to a synonym of CLOEON (Leach). If this genus occures in the Little Manatee River or Alafia River, it represents a significant extension beyond the previously observed range. BERNER (1977) reports CLOEON in Florida only from the Tallahassee Area westward through the panhandle (BERNER, 1950, PETERS & JONES 1973, SCHNEIDER 1967.) Until confirmed I would assume that the record is a misidentification of CENTROPTILUM and delete it from the table.

CHOROTERPES (EATON) - This Leptophlebiidae genus is represented in south Florida by a single species C. hubbelli (BERNER). Lanquist (1953) reports C. hubbelli from Charlie Creek in Hardee County but not from the Peace River. I have specimens from tributaries of the Peace River (Horse Creek,DeSoto County and Shell Creek, Charlotte County) and other small to moderate streams as far south as Lee County but again not the Peace River proper. I have no reason to assume exclusion of C. hubbelli from the Peace but neither have I seen specimens or solid published data to substantiate its occurrence. C. hubbelli in my opinion probably does occupy some segments of the Peace River. COROTERPES as listed in table 2.11 is a misspelling. (BERNER 1977, BERNER 1958, PETERS & JONES 1973, SCHNEIDER 1967.)

EPHEMERELLA (WALSH) - Undoubtably this record represents E. trilineata (BERNER). Lanquist (1953) records this species from a small tributary north of Bartow, Polk County. I have been informed that this stream (Bear Branch) has, since Lanquist's collection, been highly altered such that it is presently little more than a drainage canal. E. trilineata in all likelyhood does not presently occupy this waterbody. BERNER (1977) gives a Manatee County record but not a specific location; most likely the upper Little Manatee or Manatee River Systems. The closest existing population which I have sampled is a small rapid stream in Highlands County. EPHEMERELLA could conceivably occur in some segment of the Peace River or a tributary, however, its existence needs to be confirmed. Inclusion in table 2.11 until confirmation should carry a disclaimer.

HABROPHLEBIA (EATON) - Like CLOEON occurrence of this genus outside the panhandle would be a most exciting find. However, I am inclined to be skeptical of this record until verified. The only Leptophelebiidae known to occur in the Peace Basin or South Florida is the previously discussed CHOROTERPES hubbelli. Occurrence of this organism is highly doubtful and it should be excluded from table 2.11. HABROPHEBIA as listed in table 2.11 is a misspelling.

ODONATA

ZYGOPTERA

LESTES sp. While this genus is a common inhabitant of pools and wet weather ponds I have never observed it in a truely lotic habitat in South Florida.

TRICHOPTERA

LEPTOCELLA Flint (1974) transferred all N.A. species of LEPTOCELLA to the genus NECTOPSYCHE

ATHRIPSODES MORSE (1975) removed all N.A. species of ATHRIPSODES to the genus CERACLEA.

TABLE 2.5

The following represent questionable records predominantly from temporary pools and ponds.

EPHEMEROPTERA

BAETIS

BRACHYCERCUS

TRICORYTHODES

These three mayfly genera are common inhabitants of the streams in the study area; however, I know of no literature which documents their occurrence in temporary waterbodies other than some seasonal streams.

W-215

ODONATA

ANISOPTERA

MICRATHYRIA

To my knowledge this genus does not occur in Florida.

ZYGOPTERA

ARGIA

This genus is a common STREAM FORM represented in the study area by three species A. fumipennis, A. moesta, A. sedula none of which have been documented from temporary pools. The genus LESTES is a common inhabitant of these seasonal ponds and should be added to the list.

MEGALOPTERA - NEUROPTERA is outdated

CORYDALUS

Again, a form requiring flowing water and high D.O. concentration.

DIPTERA

TIPULIDAE

CHAOBORUS

CHAOBORUS is not a member of the family TIPULIDAE

CHIRONOMIDAE

TELMATOSCOPUS

TELMATOSCOPUS is not a chironomid

CHIRONOMIDAE

MICROCRICOTOPUS

This genus while reported by COWELL, DYE, & ADAM in their Lake Thonotosassa study was found only at station 10 located in Flint Creek, a lotic habitat.

ODONATA

ANISOPTERA

GOMPHUS

MACROMIA

EPICORDULIA

None of these common genera are documented from ponds or pools by PAULSON (1966) in his extensive work on South Florida ODONATA.

Sincerely,

Richard W. Cantrell

Richard W. Cantrell
Biologist

RWC/ck
cc: Philip R. Edwards
Louis M. Fendt
Marvin Collins
Landon Ross

3-164

REFERENCES:

Applied Biology 1977 Monitoring of Periphyton, Benthic and Chemical Parameters at the Manatee Plant, August 1975 - May, 1977 - F.P. & L.

Berner, L. 1950 The Mayflies of Florida - U. Fla. Press

Berner, L. 1958 A list of Mayflies from the Lower Apalachicola River Drainage. Quart. Jour. Florida Acad. Sci. 21(1):25-31

Berner, L. 1975 The Mayfly Family Leptophlebiidae in the S. E. United States. Fla. Entomol. 58(3):137-156

Berner, L. 1977 Distributional Patterns of Southeastern Mayflies. Bulletin of the Florida State Museum, Biological Sciences 22(1):1-55

Conservation Consultant 1976 Studies on the Ecology of the Little Manatee River. - F.P. & L.

Cowell, B., Dye, C. & Adam, R. 1975 A Synoptic Study of the Limnology of Lake Thonotosassa, Florida. Part I effects of Primary Treated Sewage and Citrus Wastes Hydrobiologia. Vol. 46, 2-3

Edmunds, G., Jensen, S. & Berner, L. 1976 The Mayflies of North and Central America. U. Minnesota

Flint, O. S. 1964 Notes on Some Nearctic Psychomyiidae with Special reference to their larvae. Pro. U.S. Nat. Mos. 115 (3491):467-81

Flint, O. S. 1974 The Trichoptera of Surinam; Studies of Neotropical Caddisflies XV Stud. Fauna. Surinam , 55

Lanquist, E. (1953) A biological survey of the Peace River. Peace & Alafia Rivers Stream Sanitation Studies 1950-1953 Supplement to Vol. II. F.S.B.H.

Morse, J. C. 1975 A Phylogeny and revision of the Caddisfly genus Ceraclea Contr. Am. Ent. Inst. 11(22)

Needham, J. & Westfall, M. 1955 Dragonflies of North America. U. California

Paulson, D. 1966 The Dragonflies of Southern Florida, phd Dissertation U. Miami

Peters, W. L. & Jones, J. 1973 Historicl and Biological Aspects of the Blackwater River in N. W. Florida. Proc. 1st Intern. Conf. on Ephemeroptera. E. J. Brill, Leiden pp241-253

Schneider, R. F. 1967 Mayfly Nymphs from Northwestern Florida. Quant. Jour. Fla. Acad. Sci. 29(3):202-206

Wiggins, F. 1977 Larvae of the North American Caddisfly Genera (Trichoptera). U. Toronto

Westfall, M. Personal communications Odonata Taxonomy

MACROINVERTEBRATE LIST LEGEND

M - Marine species

* - Abundant species

Alphabetical species (Sp.(A) ect.) designate identifications used at this laboratory to separate obviously different species of the same genus. These do not represent published identifications unless designated by name following the species.

MACROINVERTEBRATE LIST

PEACE RIVER (DESOTO CO.)

INSECTA

- MEGALOPTERA
  - Corydalidae
    - *Corydalus cornutus**
- TRICHOPTERA
  - Hydropsychidae
    - *Cheumatopsyche* sp.*
    - *Hydropsyche* sp. (A)*
  - Hydroptilidae
    - *Mayatrichia ayama*
    - *Orthotrichia* sp.
    - *Oxyethira* sp.*
  - Leptoceridae
    - *Nectopsyche* sp. (A)*
    - *Nectopsyche pavida*
    - *Oecetis* sp. (A)*
    - *Oecetis* sp. (D)*
  - Polycentropodidae
    - *Cyrnellus fraternus**
    - *Neureclipsis* sp.
    - *Polycentropus cinerus**
- EPHEMEROPTERA
  - Baetidae
    - *Baetis intercalaris**
    - *Baetis spiethi*
    - *Baetis "spinosus"*
    - *Callibaetis floridanus**
    - *Centroptilum hobbsi*

_Centroptilum viridocularis_*
_Pseudocleon alachua_*
Caenidae
_Brachycercus maculatus_*
_Caenis diminuta_*
Ephemeridae
Hexagenia munda elegans
Heptageniidae
_Stenacron interpunctatum_*
_Stenonema exiguum_*
Tricorythidae
_Tricorythodes albilineatus_*
ODONATA
Anisoptera
Aeschnidae
Nasiaeschna pentacantha
Corduliidae
_Epicordulia regina_*
Neurocordulia alabamensis
Gomphidae
Gomphus dilatatus
_Gomphus minutus_*
_Gomphus plagiatus_*
Libellulidae
Perithemis tenera seminole
Macromiidae
_Macromia taeniolata_*
ZYGOPTERA

Calopterygidae

Hetaerina titia*

Coenagrionidae

Argia moesta

Argia sedula*

Enallagma cardenium*

Enallagma pollutum*

Ischnura sp.

COLEOPTERA

Dryopidae

(Pelonomus obscurus)* see notes on Horse Creek list

Elmidae

Dubiraphia (quadrinotata)*

Microcylloepus pusillus

Stenelmis sp. * possibly several species

Gyrinidae

Dineutus sp.*

Gyrinus sp.

Haliplidae

Peltodytes sp.

Hydrophilidae

Berosus sp.

LEPIDOPTERA

Pyralidae

HEMIPTERA

Belostromidae

Nepidae

Ranatra sp.*

Naucoridae

Pelocoris sp.

DIPTERA

Chironomidae

Tanypodinae

Ablabesmyia

Ablabesmyia mallochi

Ablabesmyia ornata

*Ablabesmyia parajanta**

*Ablabesmyia tarella**

Clinotanypus sp.

Coelotanypus concinnus

Coelotanypus scapularis

Coelotanypus tricolor

Labrundinia floridana

Larsia lurida

*Pentaneura inculta**

Procladius sp.*

Chironominae

Chironomini sp. (A) (Beck)

Chironomus sp.

Cladotanytarsus sp. (B)

Cryptochironomus blarina

Cryptochironomus fulvus

Cryptotendipes sp.

*Dicrotendipes modestus**

*Dicrotendipes neomodestus**

Glyptotendipes sp. (c)

Goeldichironomus holoprasinus

- *Harnischia* sp.
- *Microtendipes* sp. (A)
- *Microtendipes* sp. (B)
- *Paracladopelma* sp.
- *Paralauterborniella nigrohalteralis*
- *Pedionomus beckae*
- *Polypedilum convictum**
- *Polypedilum halterale**
- *Polypedilum illinoense*
- *Pseudochironomus* sp.*
- *Rheotanytarsus exiguus**
- *Stenochironomus hilaris*
- *Tanytarsus* sp. (A)*
- *Tanytarsus* sp. (C)*
- *Tribelos fuscicornis*
- Unidentified near *Omisus* sp. (Beck)

Orthocladiinae

- *Corynoneura* sp.*
- *Cricotopus bicinctus**
- *Psectrocladius* sp.
- *Rheocricotopus robaki*
- *Thienemanniella* sp. (A)*
- *Thienemanniella* sp. (B)*

Simuliidae

- *Simulium* sp.*

Ceratopogonidae

- (*Palpomyia* sp. A)*
- (*Palpomyia* sp. B)*
- (*Palpomyia* sp. C)*
- *Forcipomyia* sp.

- Tabanidae
- Tipulidae
  - *Tipula* sp.
- Culicidae
  - *Anopheles* sp.

CRUSTACEA

- AMPHIPODA
  - *Hyallela azteca**
- DECOPODA
  - *Palaemonetes paludosus**
  - *Procambarus* (alleni)*

MOLLUSCA

- GASTROPODA
  - Ancylidae
  - *Helisoma* sp. (A)*
  - *Helisoma* (gyraulus) sp. (b)*
  - *Hyalopyrgus aequicostatus*
  - Hydrobiidae
  - *Physa* sp.*
  - *Pseudosuccinea* sp.
- BIVALVIA
  - *Corbicula manilensis**
  - *Eupera cubensis*
  - Sphaeriidae*
  - Unionidae

ANNELIDA

- OLIGOCHAETA
  - *Aulodrilus piqueti*
  - *Dero* sp.
  - *Limnodrilus* sp.*

Lumbriculidae

Monophlephorus lacteus

*Nais variabilis**

Pristina bilongata

Pristina osborni

Slavina appendiculata

Stylaria fossularia

HIRUDINEA

Helobdella elongata

Moorcobdella microstoma

PLATYHELMINTHES

Planariidae

NEMATOMORPHA

Gordiidae

CNIDARIA

HYDROZOA

Hydra

RHYNCHOCOELA

*Prostoma rubrum**

MACROINVERTEBRATE LIST

HORSE CREEK (DESOTO CO.)

INSECTA

- MEGALOPTERA
  - Corydalidae
    - Corydalus cornutus*
- TRICHOPTERA
  - Hydrosychidae
    - Cheumatopsyche sp.*
    - Hydropsyche sp. (A)*
  - Hydrotilidae
    - Neotrichia sp.
    - Orthotrichia sp.
    - Oxyethira sp.*
  - Leptoceridae
    - Nectopsyche sp. (A)*
    - Nectopsyche pavida
    - Oecetis sp. (A)*
    - Oecetis sp. (B)
    - Oecetis sp. (C)
    - Oecetis sp. (D)*
    - Triaenodes sp.
  - Polycentropididae
    - Cyrnellus fraternus*
    - Polycentropus cinereus*
  - Philopotamidae
    - Chimarra sp.
- EPHEMEROPTERA
  - Baetidae

*Baetis intercalaris**

Baetis spiethi

*Baetis "spinosus"** possibly a complex of species very difficult to separate as nymphs

*Callibaetis floridanus**

Centroptilum viridocularis

*Pseudocloeon alachua**

Caenidae

*Brachycercus maculatus**

*Caenis diminuta**

Ephemeridae

Hexagenia munda elegans

Heptageniidae

*Stenacron interpunctatum**

*Stenonema exiguum**

Leptophlebiidae

Choroterpes hubbelli

Tricorythidae

*Tricorythodes albilineatus**

ODONATA

Anisoptera

Aeschnidae

Nasiaeschna pentacantha

Corduliidae

*Epicordulia regina**

Tetragoneuria sp.

Gomphidae

Dromogomphus spinosus

*Gomphus dilatatus**

*Gomphus minutus**

*Gomphus plagiatus**

Hagenius brevistylus

Progomphus alachuensis

Libellulidae

*Erythemis simplicicollis**

Orthemis ferruginea

Pachydiplax longipennis

Macromiidae

*Macromia taeniolata**

Zygoptera

Calopterygidae

*Hetaerina titia**

Coenagrionidae

Argia moesta

*Argia sedula**

*Enallagma cardenium**

*Enallagma pollutum**

Ischnura sp.

COLEOPTERA

Dryopidae

(*Pelonomus obscurus*) although not normally considered aquatic several specimens of larvae apparently of this species have been collected live from Horse Creek and the Peace River.

Elmidae

Dubiraphia (*quadrinotata*)*

Microcylloepus pusillus ssp.

Stenelmis sp.* possibly several species

Gyrinidae

Dineutus sp.*

Haliplidae

Peltodytes sp.*

Hydrophilidae

Berosus sp.

LEPIDOPTERA

Pyralidae

HEMIPTERA

Ranatra sp.*

DIPTERA

Chironomidae

Tanypodinae

Ablabesmyia mallochi*

Ablabesmyia parajanta*

Ablabesmyia peleensis

Ablabesmyia philosphagnos

Ablabesmyia (ramphe)

Ablabesmyia tarella*

Clinotanypus sp.

Labrundinia floridana*

Labrundinia johansenni*

Labrundinia neopilosella

Labrundinia virescens

Larsia lurida

Monopelopia boliekae

Pentaneura inculta*

Procladius sp.

Orthocladiidae

"*Cordites*" sp. (Beck)

Corynoneura sp.*

*Cricotopus bicinctus**

Cricotopus sp. I (Beck)

Psectrocladius sp.*

Smittia sp.

Thienemanniella sp. (A)*

Thienemanniella sp. (B)*

Chironominae

Chironomini sp. A (Beck)

Chironomus sp.

Cladotanytarsus sp. (B)

Cryptochironomus fulvus

Cryptotendipes sp.

*Dicrotendipes modestus**

*Dicrotendipes neomodestus**

Einfeldia natchitochea

Glyptotendipes sp.

Goeldichironomus holoprasinus

Kiefferius dux

Lauterborniella sp.

Micropsectra sp. (B)*

Microtendipes sp. (A)

Nilothauma bicornis

Pagestiella sp.

Parachironomus sp.

Paralauterborniella nigrohalteralis

- Polypedilum convictum*
- Polypedilum fallax
- Polypedilum halterale*
- Polypedilum illinoense
- Polypedilum sp.
- Pseudochironomus sp.*
- Rheotanytarsus exiguus*
- Stenochironomus hilaris
- Tanytarsus sp. (A)*
- Tanytarsus sp. (C)*
- Tribelos fuscicornis

Simuliidae
- Simulium sp.*

Ceratopogonidae
- (Palpomyia sp. A)*
- (Palpomyia sp. B)*
- (Palpomyia sp. C)*
- Atrichopogon sp.
- Forcipomyia sp.

Tipulidae
- Tipula sp.

Culicidae
- Anopheles sp.
- Culex sp.

Stratiomyidae
- Unidentified

(Dolichopodidae)
- Unidentified

CRUSTACEA

- AMPHIPODA
    - *Hyallela azteca**
- DECAPODA
    - *Palaemonetes paludosus**
    - *Procambarus* (*alleni*)

MOLLUSCA

- GASTROPODA
    - *Amnicola dulli johnsoni**
    - Ancylidae
    - *Helisoma* sp. (A)*
    - *Helisoma* (Gyraulus) sp. B*
    - Hydrobiidae
    - *Physa* sp.*
    - *Pseudosuccinea* sp.
- BIVALVIA
    - *Corbicula manilensis**
    - *Eupera cubensis*
    - Sphaeriidae*
    - Unionidae*

ANNELIDA

- OLIGOCHAETA
    - *Allonais* sp.
    - *Dero digitata*
    - *Limnodrilus**
    - Lumbriculidae
    - *Nais* sp.*
    - *Pristina bilongata*
    - *Pristina longareata leidyi*

Pristina osborni

Slauina appendiculata

Stylaria fosoularis

HIRUDINEA

Helobdella triserialis

Mooreobdella microstoma

Placobdella multilineata

Placobdella papillifera

PLATYHELMINTHES

Planariidae

NEMATOMORPHA

Gordiidae

CNIDARIA

Hydrozoa

Hydra

RHYNCHOCOELA

*Prostoma rubrum**

MACROINVERTEBRATE LIST

MYAKKA RIVER (SARASOTA CO.)

- INSECTA
  - TRICHOPTERA
    - Hydropsychidae
      - *Cheumatopsyche* sp.
    - Hydroptilidae
      - *Hydroptilia* sp.
      - *Neotrichia* sp.
      - *Orthotrichia* sp.
      - *Oxyethira* sp.
    - Leptoceridae
      - *Nectopsyche pavida*
      - *Oecetis* sp. (B)
      - *Oecetis* sp. (C)
      - *Oecetis* sp. (D)
    - Polycentropididae
      - *Cyrnellus fraternus**
      - *Polycentropus cinereus*
    - Philopotamidae
      - *Chimarra* sp.
  - EPHEMEROPTERA
    - Baetidae
      - *Baetis "spinosus"*
      - *Callibaetis floridanus*
    - Caenidae
      - *Caenis diminuta*
      - *Brachycercus maculatus*
    - Heptageniidae

Stenacron interpunctatum

Stenonema exiguum

Leptophlebiidae

Choroterpes hubbelli

ODONATA

Anisoptera

Libellulidae

Miathyria marcella

Macromiidae

*Macromia taeniolata**

Zygoptera

Coenagrionidae

Argia sedula

*Enallagma cardenium**

Enallagma pollutum

Ischnura sp.

COLEOPTERA

Dryopidae

(*Pelonomus obscurus*)

Elmidae

Dubiraphia (*quadrinotata*)*

Stenelmis sp.*

Gyrinidae

Dineutus sp.

HEMIPTERA

Pelocoris sp.

Ranatra sp.

DIPTERA

Chironomidae

Tanypodinae

Ablabesmyia mallochi

*Ablabesmyia parajanta**

Ablabesmyia (peleenis)

*Ablabesmyia tarella**

Coelotanypus concinnus

*Coelotanypus scapularis**

Coelotanypus tricolor

Labrundinia floridana

Pentaneura inculta

Procladius sp.

Orthocladiinae

Corynoneura sp.

Cricotopus bicinctus

Cricotopus sp. I (Beck)

Psectrocladius sp.

Thienemanniella sp. (A)

Thienemanniella sp. (B)

Chironominae

Chironomus carus

Chironomus sp.

Cladotanytarsus sp. (B)

Cryptochironomus blarina

Cryptochironomus fulvus

Cryptotendipes

*Dicrotendipes modestus**

*Dicrotendipes neomodestus**

Einfeldia sp.

  - *Endochironomus nigricans*
  - *Glyptotendipes* sp.
  - *Goeldichironomus holoprasinus*
  - *Harnischia* sp.
  - *Micropsectra* sp. (A)*
  - *Micropsectra* sp. (B)
  - *Nilothauma bicornis*
  - *Parachironomus* sp.
  - *Paralauterborniella nigrohalteralis*
  - *Paratanytarsus* sp.
  - *Pedionomus beckae*
  - *Phaenopsectra flavipes*
  - *Polypedilum convictum**
  - *Polypedilum halterale**
  - *Polypedilum illinoense*
  - *Pseudochironomus* sp.
  - *Rheotanytarsus exiguus*
  - *Stenochironomus hilaris*
  - *Tanytarsus* sp. (A)
  - *Tanytarsus* sp. (C)
  - *Tribelos fuscicornis*
  - *Xenochironomus xenolabis*
- Simuliidae
  - *Simulium* sp.
- Ceratopogonidae
  - (*Palpomyia* sp. A)
  - (*Palpomyia* sp. B)
- Culicidae

Anopheles sp.

Tipulidae

Megistocera longipennis

CRUSTACEA

AMPHIPODA

Corophium sp. M

Gammarus sp.* M

Grandidierella bonneri

Hyallela azteca

ISOPODA

Cassidinidea lunifrons M

Cyathura polita M

Exosphaeroma sp. M

Munna sp. M

Sphaeroma terebrans M

TANAIDACEA

(*Tanais* sp.) M

MYSIDACEA

Mysidopsis bahia M

Mysis sp. M

Taphromysis louisianae

DECAPODA

Callinectes sapidus M

*Palaemonetes paludosus**

Rhithropanopeus harrisii M

MOLLUSCA

GASTROPODA

Amnicola dalli johnsoni

- *Ancylidae**
- *Helisoma* sp. A*
- *Helisoma* (Gyraulus) sp. B
- *Hydrobiidae*
- (*Littoridinops monroensis*)
- *Physa* sp.

BIVALVIA

- *Corbicula manilensis**
- *Eupera cubensis*
- *Mytilopsis leucophaeata* M
- *Neritina reclivata* M
- *Rangia cuneata* M
- *Sphaeridae*

ANNELIDA

OLIGOCHAETA

- *Aulodrilus piqueti*
- *Dero* sp.
- *Limnodrilus**
- *Pristina leidyi*
- *Pristina osborni*
- *Slavina appendiculata*
- *Stylaria fossularis*

POLYCHAETA

- *Boccardia* sp. M
- *Laeonereis culveri* M
- *Nereis* sp. M

HIRUDINEA

- *Helobdella* sp.

PLATYHELMINTHES

Planariidae

RHYNCAOCOELA

Prostoma rubrum

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

2600 BLAIR STONE ROAD
TWIN TOWERS OFFICE BUILDING
TALLAHASSEE, FLORIDA 32301

REUBIN O'D. ASKEW
GOVERNOR

JOSEPH W. LANDERS, JR.
SECRETARY

June 19, 1978

Mr. Gene McNeill
U. S. Environmental Protection
  Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Dear Gene:

We have completed our review of the Draft Areawide Environmental Impact Statement on the Central Florida Phosphate Industry. Our comments are as follows:

1. The impact of future activities of the phosphate industry on the availability of high quality groundwater remains largely unknown. Groundwater modeling utilized in the study is preliminary and incorporates assumptions regarding aquifer characteristics and future non-industrial water use that are likely to be incorrect. The interrelationship between ground and surface waters needs further investigation. W-216

2. The projected expansion of the industry is believed to be understated. A long-term impact analysis should be made based on the mining of known resources or reserves. W-217

3. The economic and social impacts of resource depletion are not addressed. This is a major concern to the state and should be a major concern to national security. The issue has been avoided both in the study and in response to questions during public hearings. W-218

4. While data on industry discharge to surface waters and surface water quality are presented in the working papers, an assessment should be made of the quantitative impact of such discharge on water quality. This might be done using a modeling approach. W-219

5. Non-point source discharge due to industry operations needs to be addressed. If all non-point source discharge has been converted to point source, this should be described in detail. W-220

6. Atmospheric conditions, such as temperature inversions, have a strong impact on air quality in the study area. This subject deserves further treatment. W-221

7. Quantitative estimates should be made of sinkhole occurrence in the study area. This should be related to geological conditions, surficial dewatering, and piezometric differentials, such that projections can be made for future industry operations. W-222

8. The subject of airborne fluorides needs to be studied in greater depth. The statement on page 1.12 that vegetative fluoride levels are inversely dependent on rainfall does not appear to be supported by the data given. Low fluoride levels are noted in 1972 although rainfall was also low in that year. W-223

9. A discussion of the methods for implementing the provisions of the proposed action should be included in the final Environmental Impact Statement. W-224

Our comments on the working paper, "Presentation of Effects Assessment and Impact Analysis Results" (Volume XI), as expressed in my letter of January 24, 1978 to Mr. John White, are largely applicable to the draft Environmental Impact Statement. A copy of this letter is attached and should be included in the final Environmental Impact Statement along with the present letter.

While we basically agree that the "proposed action" will be beneficial relative to current activities, it should be stressed that requirements of the proposed action must remain flexible to incorporate improved technologies for mining and processing. It should also be clearly stated in the final Environmental Impact Statement that the proposed action in no way precludes the modification of these requirements by local, state or federal government should such be indicated in the future. W-225

Finally, the above comments are not intended to minimize the excellent job that EPA and Texas Instruments, Inc. have done in assimilating and interpreting a vast amount of important data. We also recognize that many of our comments pertain to areas beyond the scope of the present study or that would require new data beyond the resources of the study. We believe, however, that it is of primary importance at this stage of the project to recognize those areas needing additional study.

Sincerely,

Jay

Joseph W. Landers, Jr.
Secretary

JWL/bs

Attachment

cc: Loring Lovell

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
2562 EXECUTIVE CENTER CIRCLE, EAST
MONTGOMERY BUILDING
TALLAHASSEE, FLORIDA 32301

REUBIN O'D ASKEW
GOVERNOR

JOSEPH W. LANDERS, JR.
SECRETARY

January 24, 1978

MAY 18 1978
D. E. R.
Water Resources Management

Mr. John White
Environmental Protection Agency
345 Courtland Street, N. E.
Atlanta, Georgia 30303

Dear John:

We have reviewed the working paper "Presentation of Effects Assessment and Impact Analysis Results" (Volume XI) and the EPA draft "Recommended Scenario". Our comments are as follows:

A major overall comment is that although the working papers pull together an enormous array of information, one cannot help but feel somewhat disappointed at the analysis of the options and the lack of perception of some potentially serious long-term adverse effects. This is accented by terminating the analysis at twenty five years and disregarding the impacts thereafter on an optimistic note. The department views EIS as an opportunity to establish the frame for a long-term, and much needed, compensative management program for phosphate ore mining and processing.

A. Our comments on Volume XI are as follows:

1. Volume XI is the pivotal document in the EPA Central Florida Phosphate Industry Study. An extremely limited review time has been allocated to this document. In view of the important policy decisions that will be engendered, it is important that it be reviewed in depth by all concerned state agencies. We have not had time to properly coordinate such a review.

2. Two of the most important areas covered by the study are water quality and quantity. As of this time, we have not received the working paper on water quality. Water quantity has been addressed only in a preliminary way in a recent paper from the United States Geological Survey.

3. The study appears to conclude that consumptive groundwater use by the industry will not lead to significant water shortage or water quality degradation. We feel that this conclusion is not justified due to: W-226

   a. the preliminary nature of the model analysis;
   b. questionable assumptions used in the preliminary modeling (e.g., no increase in water use by agriculture and municipalities); and
   c. a general lack of knowledge of the hydraulic characteristics of the aquifer.

4. Economic considerations have not been fully evaluated. No significant changes in economic impact are indicated for the various scenarios (aside from No. 2.15). This is unlikely. W-227

5. Environmental effects are averaged over the entire study area. This often results in a conclusion of low impact when severe local impacts may result. Also, cumulative effects are not adequately addressed. W-228

6. The study does not present a true picture of the long term impact of the industry. Scenario 2.11 greatly underestimates the projected impact by considering only those additional activities for which permits have been applied or which are in the process of DRI preparation or review. Scenario 2.11 presents a more realistic picture but is considered in much less detail. No analysis is given of potential activities based on phosphate deposits and/or company land holdings. No impacts are projected beyond the year 2000. W-229

7. The study does not adequately address nonpoint source impacts and their control. Area 208 planning agencies were advised that no significant technical studies of phosphate-related topics would be authorized as they would be covered in the EPA study. This had not been done, thereby leaving a large gap in the 208 planning process. W-230

8. Fluorides are probably one of the major threats to air quality. This problem is not addressed in any detail. A recent EPA sponsored study of fluoride emissions from chemical process ponds (TRC Report) should be included in the final EIS. The current sampling and analysis techniques for ambient air fluorides need to be reevaluated. W-231

9. The report states that release of nutrients to estuaries will be beneficial. This has not been demonstrated and the converse would be expected as: W-232

   a. Florida estuaries are not phosphorous limited; and
   b. the estuaries are over-nutrified at this time. W-233

10. The impact of flotation and coagulation reagents has not been addressed. These reagents are ultimately released to the environment. Their effect is unknown and should be investigated.

11. The possible control of the rate of resource depletion has not been addressed. This is an important area for consideration.

B. The following additional comments are addressed toward EPA staff draft scenario:

While none of the scenarios considered present a true areawide planning approach, which we feel to be essential, the EPA recommended scenario appears to be the most feasible and beneficial of the group. Further comments are:

1. The information given does not demonstrate that the process modifications recommended will be feasible under all circumstances. While process changes such as wet rock processing, the elimination of slime ponds, and the recovery to fluosilicic acid and uranium should be implemented, sufficient flexibility must be maintained to account for varying conditions and improved technology. All such processes must be compatible with energy considerations and must consider possible negative side effects such as changes in in-plant water management and possible toxic environmental effects.

2. Elimination of above ground slime ponds may not completely eliminate the potential for surface and groundwater contamination.

3. The requirement for complete mining and reclamation plans prior to the initiation of mining has been dropped from the section on reclamation in the December 20, 1977 draft. This requirement should be reinstated. Plans should include all damming, diking, stream rerouting, etc. Plans for revegetation should be included in restoration plans. A mechanism is needed to ensure the enforceability of such plans.

4. The section dealing with the reclamation of wetlands is ambiguous. We feel that any attempt to categorize wetlands in terms of greater or lesser importances is, at this time, largely arbitrary. In general, wetlands should be preserved. Any further destruction or modification of those wetlands under federal or state regulatory jurisdiction should be done only under conditions of extreme necessity for the public interest as determined on a specific case basis.

5. Effluent limitations should extend to nonpoint as well as point sources.

6. Water introduced into the Florida Aquifer via connector wells should conform to state drinking water or groundwater standards.

7. Monthly air pollution control inspections would be costly. Semi-annual inspection, stack testing, and witnessing of the stack testing performed by the industry should be implemented. Additional sampling personnel will be required. What is needed is a cost effectiveness analysis of various monitoring alternatives.

8. The intensive operations and maintenance program existing prior to 1972 was initiated specifically to monitor the industry during a period of enforcement action. Although a program of this scope is not required at this time, the present monitoring and field surveillance of the industry should be expanded to verify continued compliance.

9. A more extensive program is needed for the monitoring of earthen dams used for the impoundment of liquid wastes from mining and processing operations.

Also needed in all the scenarios is sound analysis of existing legal authority to regulate the phosphate industry and recommendations for additional authority where there is a need.

An important factor in the final scenario for the draft EIS should be flexibility. The EPA Environmental Impact Study has attempted to provide an overview of the current knowledge of the environmental impact of the phosphate industry. There remain, however, vast areas of unknown impact. These should be identified to the extent practical. The study and final scenarios should serve as a basis for future studies and a foundation for future planning for the development of the industry.

My staff has been keeping in close contact with Mr. McNeill of your staff, and will continue to do so. We will be glad to meet and discuss any of these items. Also, I will be glad to discuss this matter personally with you if you wish.

Sincerely,

Joseph W. Landers, Jr.
Secretary

JWL/ns

cc: James Brindell
John Bottcher

tampa bay regional
planning council

3151 third ave. north suite 540 · st. petersburg, fla. 33713 · (813) 893-2635/tampa (813) 224-9380

June 13, 1978

Mr. John C. White
Regional Administrator
Environmental Protection Agency
Region VI
345 Courtland Street Northeast
Atlanta, Georgia 30308

Attention: Mr. Gene McNeil

Subject: TBRPC Clearinghouse Review No. 101-78; Draft Areawide EIS
Central Florida Phosphate Industry, Tampa Bay Region

Gentlemen:

Please be advised that on June 12, 1978 the Tampa Bay Regional Planning Council officially adopted the attached report on the above referenced draft Environmental Impact Statement.

In accordance with OMB Circular A-95 (revised) this brings to a close the regional clearinghouse review (#101-78) of the draft EIS. If you have any questions regarding this procedure, please feel free to contact me.

Sincerely,

William A. Ockunzzi
Director of Planning

WAO/amr

cc: Manatee County Planning
Hillsborough County Planning Commission

3-19B

Chairman Ron Norman
Mayor, City of Sarasota

Vice-Chairman Jan Platt
Councilwoman, City of Tampa

Secretary/Treasurer Michael Ledbetter
Commissioner, Pasco County

Scott D. Wilson
Executive Director

Bradenton Clearwater Dunedin Gulfport Largo Oldsmar Palmetto Pinellas Park St. Petersburg Sarasota Tampa
Hillsborough Manatee Pasco Pinellas Counties

Agenda Item #11B
6/12/78

TBRPC CLEARINGHOUSE REVIEW #101-78
DRAFT AREAWIDE ENVIRONMENTAL IMPACT STATEMENT
CENTRAL FLORIDA PHOSPHATE INDUSTRY
PREPARED BY THE U. S. ENVIRONMENTAL PROTECTION AGENCY, MARCH, 1978

The following presents the comments and recommendations of the Tampa Bay Regional Planning Council in accordance with OMB Circular A-95 (revised). This report is based upon information obtained during the review of six phosphate related Developments of Regional Impact conducted by the Council, the Council's comprehensive planning programs and Water Quality Management Program and the Central Florida Phosphate Industry EIS.

The Council supports the efforts of the Environmental Protection Agency in the preparation of the (draft) Areawide EIS on the Central Florida Phosphate Industry and finds that it is consistent with the intent of the Council's growth policy as expressed in Future of the Region adopted in April, 1975, and amended in February, 1977.

The (draft) Areawide EIS on The Central Florida Phosphate Industry is extremely valuable in that it represents the first time that all data sources regarding the industry have been collected, organized and analyzed in a single work effort. The EIS furnishes an important source of data to supplement the Florida DRI process and provides further justification for the designation of Bone Valley as an Area of Critical Concern as provided for in Chapter 380.05 Florida Statutes and suggested by the Council in its adopted Regional Comprehensive Plan Guide and the Rural Development Study, 1974.

In accordance with the requirements and purpose of the federal EIS system, the recommendations in the Draft EIS are confined to those controls that can be implemented through the federal permit system (NPDES, air quality and dredge and fill). The study has analyzed the impacts upon the industry and the social, physical and biological environment that could result from permitting new mines and from various modifications or requirements in these permits.

GENERAL COMMENTS

It has remained a concern of the Council that the ongoing phosphate study was based solely on existing data. Unfortunately, the (draft) EIS shows no evidence that additional new data has yet been generated by this areawide study of the phosphate industry. As it is too late to expect the study effort to initiate a new data collection effort, it is recommended that the final EIS include specific recommendations identifying needed new data collection efforts and identify how these efforts should be conducted and by whom. W-234

The study represents the first effort to analyze water withdrawals of the industry as a whole and will provide a valuable data base for future water resource analyses and monitoring efforts. Most importantly, the study results support the Council's previously stated concerns over the cumulative effect of phosphate drawdowns on the Floridan Aquifer. While it is recognized that EPA has no statutory authority to directly control water withdrawals, it is recommended that the final EIS include recommendations concerning the aggregate drawdown of water withdrawals.

The study supports the Council's conclusions that the major negative environmental impact of phosphate mining stems from the disturbance or destruction of essential natural systems and environmental sources. The study also supports the Council's concerns over the severe long-term negative environmental impacts associated with traditional land reclamation as identified by the Council through its DRI review process early in 1976. However, the study fails to acknowledge, recognize or utilize the significant advancements that this Council, local governments of the region, and several of the proposed new mines within the region have made over the last two years in providing for the substantial mitigation of these environmental impacts through natural systems reclamation. It is recommended that the results of these work efforts be incorporated into the final EIS. W-235

The study is limited in that it only deals with a 20-year planning horizon; and it only assesses the impacts of existing and proposed mining activities. No study or analysis was conducted with respect to the impacts of long-term mining of the extensive deposits of phosphate rock not currently controlled by the mining industry. As phosphate reserves are estimated to last for 50 years, it is recommended that this issue be addressed. W-236

The comments on radiation lack the specificity necessary to guide local governments in developing reasonable regulations to protect the public welfare, especially in regard to reclaimed lands in residential or agricultural use, and the quality of the water entering the deep aquifer through connector wells. It is recommended that the final EIS address the problems of radiation and that a surveillance monitoring program of radiation levels be considered. W-237

Section 4 of the (draft) EIS describes measures to mitigate unavoidable adverse impacts resulting from the permitting of new mines, but does not include cost estimates of expanded state air and water monitoring programs and/or land reclamation planning. It is recommended that the final EIS include cost estimates of the suggested monitoring programs and incorporate recognition of the existing responsibilities and efforts of local governments in the review, permitting and monitoring of mining activities. W-238

There is little reference to the DRI process throughout the Draft EIS. It appears that the study effort has failed to recognize the DRI process as an effective tool for management and control of the industry; as well as the role that the regional planning councils and the Division of State Planning can play in assessing and controlling areawide impacts W-239 from the industry. Rather, the Draft EIS recommends site-specific environmental impact statements of each new mine. This would appear not only to completely bypass the DRI process, but will result in increased costs to the developer through duplicating efforts, and increased costs to the public for the development of the site-specific EIS. It is recommended that the DRI process be recognized as a viable investigative process and that the State of Florida and the EPA incorporate into the DRI application appropriate concerns, not currently addressed in the DRI process. This would eliminate the need for a separate EIS on each new mine, would result in simultaneous review by EPA and the regional planning councils and would substantially reduce expenses to the developer and to the public.

While the EIS study effort represents an invaluable first-step in the examination and assessment of areawide impacts resulting from phosphate mining, the study has failed to provide guidance and recommendations for mechanisms to mitigate the aggregate impacts resulting from expanded phosphate mining activities within the Tampa Bay Region beyond that which can be implemented through the federal permit system. W-240

It is recommended that the phosphate mining areas of Central Florida be designated by the State as an "Area of Critical State Concern" in accordance with the provision of Chapter 380.05 Florida Statutes. The resulting impacts such as, water consumption, radiation and land reclamation are of such magnitude that comprehensive, integrated and uniform management throughout the phosphate mining area is necessary. The "Area of Critical State Concern" designation would provide the vehicle whereby the state, local governments, EPA and the industry together can develop the necessary mechanisms and controls to mitigate the aggregate impacts of mining.

Ronald W Norman
Chairman

ATTEST: Michael Ledbetter
Secretary/Treasurer

These Comments and Recommendations
were approved by a majority vote of
the Tampa Bay Regional Planning
Council this 12th day of June, 1978.

COUNTY OF SARASOTA
FLORIDA
BOARD OF COMMISSIONERS

[illegible] • DISTRICT 1
[illegible] • DISTRICT 2
[illegible] • DISTRICT 3
[illegible] • DISTRICT 4
[illegible] • DISTRICT 5
[illegible] • COUNTY ADMINISTRATOR

P.O. BOX [illegible]
SARASOTA, FLA. [illegible]
PHONE [illegible]

May 24, 1978

Mr. John E. Hagan III, Chief
E.I.S. Branch, Region IV
U.S. Environmental Protection Agency
345 Courtland Street
Atlanta, Georgia 30308

Dear John:

It was a pleasure meeting and talking with you briefly at the recent Phosphate Draft E.I.S. Workshop at Manatee Junior College in Bradenton on May 22, 1978. As per my promise, please find enclosed a transcript of my presentation.

I know you will seriously consider the points brought up and the recommendations which are made in the presentation. There are several areas of concern to Sarasota County, such as the impact of radiation, economics and air inversions (see attached Sarasota Journal article) which we are currently investigating. You can expect a detailed analysis of those parameters and others in the near future.

I think EPA can be proud of the job which Gene and his staff have done to date on this very complex and environmentally important issue. We very much look forward to seeing your response to our comments and to seeing the Environmental Impact Study in its final form.

Sincerely yours,

Jeff Lincer

Jeffrey L. Lincer, Ph.D.
Environmental Specialist and
Acting Director, Pollution Control Division

JLL:rkt
Enc:

xc: E. E. Maroney w/enc.
Eugene McNeill w/enc.
Florida E.I.S. Phosphate Advisory Committee w/enc.

PRESENTATION TO U. S. ENVIRONMENTAL PROTECTION AGENCY
ON THE DRAFT AREA-WIDE ENVIRONMENTAL IMPACT STATEMENT
CENTRAL FLORIDA PHOSPHATE INDUSTRY, DATED MARCH, 1978

PUBLIC HEARING, MANATEE JUNIOR COLLEGE, BRADENTON, FLORIDA
MAY 22, 1978
7:00 P.M.

I am Jeffrey L. Lincer, Ph.D., of 4718 Dunn Drive, Sarasota. I am an Environmental Specialist for Sarasota County and am appearing this evening at the request of Sarasota County to comment on the Draft Environmental Impact Statement as it relates to the phosphate industry in the seven county study area.

We can appreciate the amount of work and energies that went into the preparation of this draft E.I.S., and compliment EPA's staff and their consultants for bringing it to its present stage. There are, however, some serious concerns that Sarasota County has with respect to the draft E.I.S. and these are as follows:

1) AIR AND WATER POLLUTION

On Page 1.9, a statement is made that, "the industry's air and water emissions are controlled by collection devices or other treatment to meet State and Federal effluent standards." This may very well be the way the system is supposed to work, however, I think the question which should be raised is whether or not the system and equipment is operating as envisioned to ensure environmental quality. W-241

With respect to the natural environment and climatic conditions, the statement is made on Page 1.10 that "because of the area's flat terrain and steady winds, instances of extreme air pollution in West Central Florida are not common and occur primarily only in heavily populated or industrialized areas, such as Tampa." This may very well be generally true for West Central Florida, but it is our understanding that Sarasota was to be included in this seven county study area. Discussions with Meterologists at the National Weather Service Station in Ruskin indicate that inversions occur in this area on a nightly basis. In this light, and given the average age of our retirement community, we feel that additional investigation ought to be made of what may be unique climatalogical situations in this area. W-242

Data do exist in the files of the National Weather Service in Ruskin which deals with parameters, such as wind speed and direction, height of mixing layer, etc., that relate to inversions. We would strongly request that these and other pertinent data be reviewed to determine the importance of air inversions in and to the County of Sarasota.

We can take little comfort in some of the twenty-four hour SO_2 data as reported on Page 1.11. Although these remain below critical levels, analytical problems uncovered by EPA indicate that actual levels could have been two or three times higher than those reported. W-243

The 1976 fluoride emissions by the phosphate industry were reported at 315 metric (346 short) tons. Fluoride levels in vegetation according to the draft E.I.S. are dependent upon rainfall frequency, thereby explaining the high (60 ppm) levels in 1974. That would be acceptable to explain the 1974 high fluoride levels, but the data presented in Figure 1.3 indicate a trend of increasing fluoride levels starting in 1972 with ever-increasing levels of fluoride. We would like to be sure that these data are subjected to rigorous, statistical examination to insure that the conclusions are justified. W-244

2) FLUORIDE AND URANIUM

Recovery of these two compounds based solely on economic consideration, as implied on Page 1.72, is totally unacceptable in view of documented damage caused by these compounds. They should be removed from the waste water as a simple matter of health protection. If a profit results, so much the better for the industry, but placing such an emphasis on profit is neither justifiable nor desirable from the public or environmental health standpoint. As a matter of precedent and historical achievement of this action, U.S.S. Agri-Chemical and W. R. Grace are recovering fluoride from phosphoric acid and the Uranium Recovery Corporation, Gardinier, a subsidiary of Westinghouse, Agrico-Chemical and Freeport Minerals are all performing a similar recovery for uranium. With respect to uranium, the savings in terms of oil energy equivalence (and, therefore foreign dependence) would be considerable and is estimated to be between 97 129 million barrels by the draft E.I.S., itself. W-245

3) WATER USE

With respect to the recommended connector wells as suggested on Page 1.71, the utmost caution is encouraged such that existing aquifer water is not degraded. If the use of floating dredges, which would not necessitate de-watering of the mining site, can be shown to result in less environmental impact than this approach, it should be encouraged. W-246

4) WATER QUALITY

A misconception that has been perpetuated by the draft E.I.S., as it stands now, is that EPA "has no direct legal authority to change requirements for existing sources". This is stated on Page 1.74 and is virtually hogwash. One has but to turn to Section 302 in Public Law 92-500 to find the following diametrically-opposed statement which relates to specific point sources, "whenever, in the judgment of the Administrator, discharges of pollutants from a point source or group of point sources, with the application of effluent limitations required under Section W-247

(2) of this Act, would interfere with the attainment or maintenance of that water quality in a specific portion of the navigable waters and industrial uses, and the protection of public water supplies, agricultural and industrial uses, and the protection and propagation of a balanced population of shellfish, fish and wildlife, and allow recreational activities in and on the water, effluent limitations (including alternative effluent control strategies) for such point source or sources shall be established which can reasonably be expected to contribute to the attainment or maintenance of such water quality." W-248

Not only does EPA have the authority, they have the legal responsibility to improve existing effluent guidelines when studies like this support said corrections.

Along these lines, Sarasota and the State of Florida are already on record as saying that the application of BPT would result in substantially more stringent effluent limitations.

5) HABITAT LOSS AND WETLANDS

We are encouraged to see reference made (Page 1.21) to the Florida Department of Natural Resource's classification of mixed forest communities, hammocks and dry prairies as highly endangered and emphasis being placed on their importance to wildlife. W-249

Without a doubt, the area's wetlands (i.e. bayheads, hardwood swamps, cypress swamps, mangroves, wet prairies, fresh water marshes and salt water marshes) are the area's most important ecosystems in terms of life support or productivity. Hardwood swamps and cypress heads are, we concur, No. 1 and No. 2, respectively, in importance. As pointed out in the E.I.S., Darnell's 1976 study indicated that the loss of wetland habitat is the most important impact of construction activity (Page 3.3).

We also concur that, and emphasize that, these Florida wetlands are of national significance because they, with some of the similar habitat in Southeast Louisiana, are the remaining wetlands of significant extent and value in the United States.

In speaking of expanses of natural vegetation in "larger parks", mention was made of the Hillsborough River State Park on Page 1.20, but no mention is made of the Myakka River State Park, which is right on one of the rivers likely to be the most impacted by planned phosphate mining activities.

With respect to projecting the changes in land use which will occur in the future, Table 1.31 on Page 1.63 is misleading. It indicates that the wetlands which represent 178,268 hectares as of 1975, will diminish very slightly and, in fact, decrease only 1.1% over the period 1975 to the year 2000. In view of the inter-relatedness of phosphate deposits and wetlands, it would seem unwise to project such a minimal change unless strong regulations are enacted and enforced to protect these critical areas. If this projected decrease is based, in any way, upon the assumption that a significant amount of the wetlands can be returned to their original structure and function, then, serious thought ought to be given to the embryonic state of the art of reclammation. That is, to our knowledge, no one has yet to demonstrate true reclammation of a hardwood swamp, a cypress head or any other category of wetland which takes tens, if not hundreds of years to reach its ultimate degree of complexity and function, dependent upon, as yet, poorly understood and inter-related parameters, (e.g. drainage, organic matter, temperature, etc.)

With respect to any DRI or Site Specific E.I.S., not only should a thorough inventory be made of the types of habitat, but a scientifically creditable accessment of the inter-relationships between those habitats and the proposed development should be clearly stated.

6) SPECIES OF SPECIAL CONCERN

With respect to inventorying wildlife, and it is too easy to simply include a list of species thought to be there, special care should be taken to list rare and endangered species and species of special concern recognized by both the Federal Office of Endangered Species and FCREPA (Florida Commission on Rare and Endangered Plants and Animals). W-250

As a final note concerning reclammation of these habitats, it should be done in such a logical sequencing pattern that both plants and animals are provided adequate refugia for the life of the project.

7) SAMPLING

As indicated on Pages 4.4 and 4.5, the water monitoring program and dam inspection program suggested are the bare minimum which the public should expect to maintain the quality of their environment and their health. With respect to "dams", there really should be none of these in the future. If, in fact, inspections, sampling and monitoring are to reflect a normal situation, these events should be unannounced. The resulting data would not only give the agency that much more confidence, but assuming that the results are positive, it would give the industry a welcomed opportunity to show off the results of its efforts to maintain a high quality environment. W-251

With respect to sampling frequency (that is, for source sampling and ambient water monitoring), a sampling program should not be locked into a quarterly basis and provisions should be made for more frequent monitoring should the situation justify it. This same comment would hold then for the sampling of receiving waters at optional locations downstream from the dischargers. If the [illegible] of an annual composite sampling of all dischargers to develop a picture of the additive effects, the frequency once a year would not be acceptable since far too much damage could be done to the aquatic environment long before the need for remedial action would be determined by that monitoring program. Any composite sampling, from a variety of dischargers should take into consideration an analysis which would be proportional to both flow and time of operation.

8) RADIATION

The potential for human health hazard is great. Because much of the data is still being developed, with this E.I.S. in mind, we will reserve comment on this subject until concrete figures on exposure, chronic effects over time, etc. are available. Where the research has been done, human hazard has been indicated. We will make additional comments on this subject when additional data are available, and analyzed. W-252

9) ECONOMICS

We would like to point out that inadequate consideration has been given to the economic burdens which phosphate mining operations places on community services and infra-structure (substantial monitoring costs were covered by other speakers).

On the National scale, it seems utterly foolish to encourage exportation of any finite and strategic resource, e.g. oil or phosphate, when, by doing so, we place ourselves in such a precarious position with respect to dependence upon other countries. In view of the history on oil, we would strongly recommend that no more phosphate be exported until a sound National Policy on this can be established. W-253

We will save any additional comments on this, radiation, inversions, etc., for our written comments, which will be submitted shortly.

10) BASIS OF THE SCENARIO

The State of Florida has already taken steps to provide more stringent protection against the adverse effects of phosphate mining, which go beyond Federal requirements.

We encourage you to strengthen the scenario in the indicated areas so that the EPA and other Federal agencies will be able to meet their responsibility in reinforcing the environmental protection efforts of State and Local Governments. W-254

JLL:rkt

JOURNAL
5-23-78

pollution index

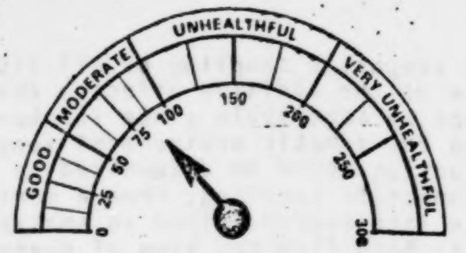
Reading covers the 24 hour period ending at 8 a.m. today

LATEST PSI: 87

Pollutant: Ozone

Health Implications:

Moderate danger to public health indicated in today's index.



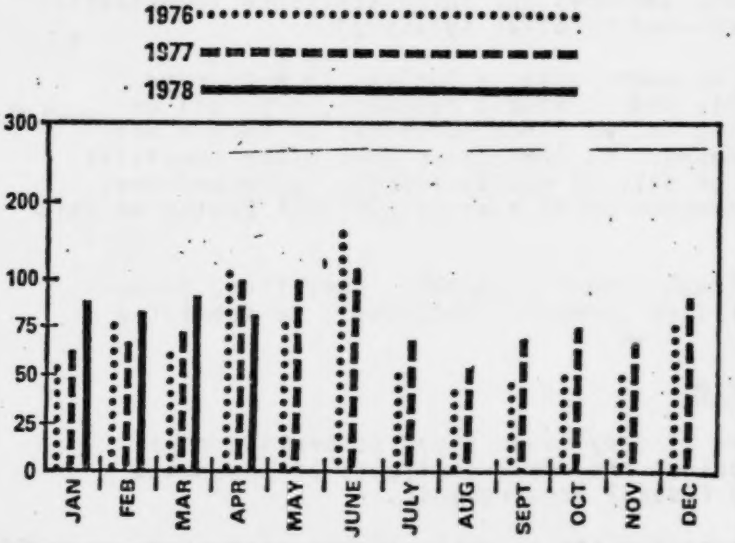
PSI readings above 300 are hazardous to public health.

The PSI (Pollutant Standards Index) count is taken by the Sarasota Environmental Control Department at four different points around the county, measuring the ozone, particulates, sulphur dioxide, nitrogen dioxide, and carbon monoxide. The daily PSI count is derived by taking the highest of the four pollutant readings. A reading to 50 would be well within the "acceptable" range of modern living.

Data courtesy of The Sarasota County Environmental Control

psi vs. time

The graph describes a broad picture of the PSI count in recent years. Lines compare highest monthly readings for respective years. Graph curves do not reflect daily readings.



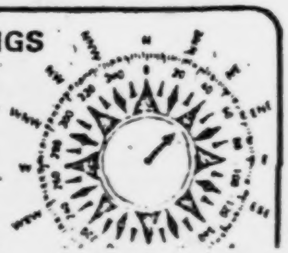
11 A.M. READINGS

Temperature 83°

Dew Point 64

Barometer
(inches) 30.06

Visibility 4 miles



3-208

Over Area

Journal 5-23-78

'Bad Air' Caught

By PETE DOBENS
Journal Staff Writer

Caution — breathing may be hazardous to your health.

If you found breathing tough this morning, you can expect the same trouble Wednesday as moderate to unhealthy levels of ozone air pollution have descended over the local area.

Trapped by an inversion at 6,000 to 7,000 feet, the air pollution is being held in place by light and variable winds.

Joe Plante, meterologist at the U.S. Weather Service in Ruskin, said this morning that the inversion should break by midday and allow for some mixing of the atmosphere. But, a second inversion at 14,000 feet will keep the air within that two-mile plus area.

Citing a weather bulletin from the National Weather Service office in Washington, Plante said parts of Florida are covered by stagnant air.

With winds this morning at five miles an hour from the east and a seabreeze this afternoon, the pollution is just swirling around the area and not moving out.

Normally, with inversions, winds push the pollution out of the area. But, Plante said the light winds which will be shifting will not move the air mass.

With only a small chance of showers today, weather officials are not expecting the

COUNTY OF SARASOTA
FLORIDA

BOARD OF COMMISSIONERS

ANDREW SANDEGREN • DISTRICT 1
BEVERLY CLAY • DISTRICT 2
JAMES D. NEVILLE • DISTRICT 3
JOHN M. SABA, JR. • DISTRICT 4
LARRY RHODES • DISTRICT 5
ED MARONEY • COUNTY ADMINISTRATOR

P.O. BOX 8
SARASOTA, FLA. 33578
PHONE: 813/365-1000

22 June 1978

Mr. John E. Hagan, III, Chief
E.I.S. Branch
U.S. Environmental Protection Agency
Region IV
345 Cortland Street, N.E.
Atlanta, Georgia 30308

RE: Comments on Draft Areawide Environmental Impact Statement on the Central Florida Phosphate Industry

Dear Mr. Hagan:

Please find enclosed additional detailed comments by Sarasota County on the Draft Areawide Environmental Impact Statement on the Central Florida Phosphate Industry. The comments are intended to strengthen the Final Areawide EIS and ensure adequate guidance for subsequent site-specific environmental impact statements for particular phosphate mining projects.

Should you have any questions concerning the enclosed comments, please do not hesitate to call Dr. Jeffrey L. Lincer, Environmental Specialist for Sarasota County, telephone number 813-371-3104.

Your consideration of Sarasota County's comments is appreciated.

Very truly yours,

Andrew Sandegren

ANDREW SANDEGREN, Chairman
Board of County Commissioners
of Sarasota County, Florida

JUN 23 1978

RLS:AS:jw
Enclosure

COMMENTS ON DRAFT AREAWIDE PHOSPHATE EIS

BY

SARASOTA COUNTY

JUNE 21, 1978

WETLANDS

On page 1.72, an inference is made that category 1 wetlands (which generally includes cypress swamps, swamp forests, wet prairies and certain freshwater marshes) should not be altered. However, no specific statement to that effect is provided. It is our recommendation that such a statement be provided in order that no misinterpretation of these guidelines is made.

There is also a real need to clarify the difference between categories 2 and 3 on page 1.72, if they exist. For instance, reference is made to "certain isolated non-category wetlands" in category 2, which provides some ambiguity. Under category 3, the statement is made that "these [wetlands] are isolated and normally intermittent in nature and have insignificant hydrological functions and minimal life support value". There is considerable value placed on these wetland depressions, which by themselves may be singularly minor in their life support value, but in total may be the major climatological factor modifying Central Florida's weather. In addition, the total edge area or ecotone provided by literally tens of thousands of these small intermittent ponds contributes greatly to the life support system of the biological community. W-255

Accordingly, the Draft EIS should be modified to specify that the cumulative value of these intermittent shallow depressions be determined in site-specific efforts prior to automatically classifying them in category 3.

A strong statement should also be made relative to the mining of lands juxtaposed to these wetlands. That is, we cannot afford ambiguous wording that would allow us to cut the "hydrological throats" of these wetlands by mining all around them, thereby leaving a pedestal community, which ultimately dries up because of the neighboring drainage patterns.

It is important, therefore, that the Areawide EIS call for an analysis of the relationship between juxtaposed hydrologic systems in any site-specific EIS. This comment should be added to paragraph 4 on page 2.91 or paragraph 3 on page 3.4.

WATER QUALITY

There is a temptation to assume that the water quality problem is not really a regional one but a local one. The Final EIS should recognize that even a localized impact of lowered water quality on a recreation-based economy could be devastating. Recreational activities, such as fishing, swimming, boating and other water-oriented activities, depend very greatly on the maintenance of high quality water. One has but to recall the devastating effects of slime spills on the Peace River to realize the potential impact of poor water quality on a recreational-based economy. W-256

A specific example of the value of a recreational resource, dependent on water quality and quantity, is that of the Myakka River State Park. Sarasota County has calculated that nearly a quarter of a million people visit this park per year and they contribute conservatively one-half million dollars to the local economy. As another example of the impact of, in part, lowered water quality on the recreational economy, the Mote Marine Laboratory completed an economic analysis of the impact of the 1971 red tide outbreak on seven coastal counties, including Sarasota.[1] It was estimated that the impact of that red tide outbreak on the tourist-oriented community was in excess of twenty million dollars. This estimate, like the one for Myakka State Park, was based on economic data from the early 1970's. Impacts, based on more recent figures, would undoubtedly be greater.

RECLAMATION

As pointed out in the Draft EIS (page 4.2), "mining disturbs existing land cover, changes land use and redistributes soil and radioactivity." The subsequent statements made on pages 4.2 and 4.3, relative to reclamation, are significant steps in the right direction; however, they seem almost editorial in nature rather than establishing firm requirements for site-specific EIS's. The Final EIS should be modified to specifically recommend that the provisions of the Federal Surface Mining Control and Reclamation Act of 1977 be adopted by Federal, State and Local agencies to regulate the reclamation of phosphate strip mining. This should be incorporated into the last paragraph on page 4.2. W-257

Although recognition is given to the fact that endangered species will likely experience great losses (1.26), inadequate attention is given to possible mitigating efforts (Section 4). A significant omission, in the form of the U.S. Fish and Wildlife Service's report on wildlife (prepared by the Archbold Biological Station), is glaringly obvious. Recommendations contained therein should be incorporated, especially with respect to available reclamation and wildlife management techniques. W-258

In the above report, reference should be made to: Section VII, which deals with existing fish and wildlife management programs (pages 160-166); Section IX, which deals with the potential impacts (both direct and indirect) of mining on fish and wildlife (pages 1267-1274), and; Section XC, which specifically addresses reclamation recommendations (pages 1277-1279). W-259

---

[1] Habas, E. J. and C. K. Gilbert, 1974. The economic effects of the 1971 Florida Red Tide and the damage it presages for future occurrences. Envir. Letters 6(2):139-147.

CLIMATOLOGY

Night-time inversions and region-wide high pressure zones, which have similar effects, are common occurrences in this area. In addition, summer cyclonic weather patterns occur regularly during the day. The generalized concept of meteorology presented in the Draft EIS does not agree with the existing local air modeling and observations on climatology. Sea breezes, in fact, are very complex in their meteorological characteristics and they do not always cleanse themselves rapidly of pollutants as one might expect. Factors which operate contrary to this intuitive reason are: 1) the back and forth movement of the winds which make the air subject to pollution emissions more than once; 2) the very frequent inversions associated with coastlines; and, 3) a multitude of other micro-meteorological conditions found along this coastline. W-260

The micro-meteorological conditions along the coastline are indeed complicated and should be of primary concern when doing a site-specific EIS or DRI. We encourage you to make a strong statement in the Final EIS (for instance on page 3.1) indicating that these kinds of atmospheric conditions should be attended to in detail in the site-specific EIS's. Please note that valuable atmospheric data are currently available at both the Ruskin Weather Station and at Sarasota County's Pollution Control Division.

AIR MONITORING

With reference to figure 1.3 on page 1.12, staff research since Dr. Lincer's presentation of May 22, 1978, indicates that the basis for relating vegetative fluoride primarily to rainfall frequency is probably questionable. Although there is an inverse relationship between rainfall and vegetative fluoride for the years 1970 through 1974, the correlative relationship between those parameters for the years 1964 through 1970 is more of a direct (or positive) relationship. Vegetative fluoride levels may be very good indicators of fluoride emission and it would be a mistake to minimize their value with this Draft EIS such that less emphasis was placed on continuing vegetative fluoride monitoring. If a better monitoring program can be demonstrated, then that should, of course, be used. However, we suggest that EPA not discourage the monitoring of this poisonous substance by suggesting that vegetational monitoring is undesirable unless an adequate justification can be made for such a move and a better monitoring mechanism can be recommended. W-261

RADIATION EXPOSURE

The lack of existing data on radiation exposure connected with phosphate mining is reflected in the Draft EIS, which was essentially limited to compiling existing information. The Final EIS should clearly acknowledge this limitation and call for the: 1) development of radiation exposure data in subsequent site-specific impact statements, as well as, 2) enactment of adequate Federal and State monitoring requirements. W-262

As it now stands, the Draft EIS presents the meager existing data in a manner which improperly suggests that the lack of information reduces the probability of radiation exposure risks resulting from phosphate mining. A glaring example of this approach is provided in the Section of the Draft EIS assessing the radiation environment (pages 1.48-1.54) as part of the background and description of the proposed action. The Draft EIS acknowledges that all radiation exposure is considered harmful and the long term effects of low radiation doses are not fully known (page 1.50). Nevertheless, the summary of this Section (page 1.52) is entirely devoted to statistics which are presented in the summary for the first time to indicate that Polk County has a lower lung cancer mortality rate than other areas of the State. This is a correlative relationship and should not be presented as cause and effect. W-263

This arrangement of information is particularly inappropriate because the body of the report states that radioactive concentrations have been shown to be higher in homes and other structures built on reclaimed land than in structures located on land outside the mineralized phosphate area (pages 1.51-1.52). No mention is made of the estimated increased risks of lung cancer from living in such homes although such estimates have been calculated. W-264

Although it is recognized that vegetables grown in the Bone Valley region have higher radiation concentrations (page 1.52), there is no mention anywhere in the Draft EIS of any need for information on radiation concentrations in citrus or cattle raised on reclaimed land or the risks which such products impose on humans. This is particularly disturbing since agriculture is one of the major reclamation alternatives for mined land. The Draft EIS states, "there has been no proof to date that any activity of the industry causes a radiation impact on the general population" (page 2.63). Then, after identifying pathways for radiation impact by the industry, the Draft EIS merely observes (page 2.64): W-265

> "Quantifying impacts on the general population by exposure associated with the pathways just listed was considered beyond the scope of this program."

In assessing the impact of radiation exposure resulting from new mining, the Draft EIS asserts, "the impact on the general population and on phosphate workers . . . resulting from the forecasted increase in mining activity . . . would be insignificant compared with that under Scenario 2.15" (the Without Action Alternative). This seems reassuring, but it is difficult to understand how the impact of new mining could be compared to the impact of the Without Action Alternative when there has been no quantification of the radiation exposure impacts associated with reclaimed land associated with either Scenario (cf. pages 2.63-2.64). W-266

Unlike the approach taken to the impacts of mining upon water quantity (page 2.74), the Draft EIS did not attempt to consider a "worst-case" approach to radiation on water quality or land reclamation due to the lack of date (pages 2.63-2.75). It is perhaps natural to de-emphasize invisible, emotion-arousing dangers which are difficult and expensive to quantify. Nevertheless, the Final EIS should present, in a more forthright manner, the limited amount of disturbing information which is currently available and clearly call for the development of quantified radiation exposure data in subsequent site-specific impact statements as well as a program of long-term monitoring. W-267

SHORT-TERM USE VERSUS LONG-TERM PRODUCTIVITY

Section 5 of the Draft EIS should provide a well-ordered analysis that relates the short-term effects of new phosphate mining in the study area to the long-term impacts that can be expected from such mining. W-268

The study area is the major domestic supplier of phosphate, a non-renewable resource of strategic importance to the security and economy of the entire nation. Accordingly, this Section of the Draft EIS should attempt to clearly define the policy choices which must be considered by Federal, State and Local government officials and the public in determining what controls should be placed upon phosphate mining in Florida. W-269

The current disjointed juxtaposition of positive and adverse impacts should be replaced with a sequential analysis of the short-term and long-term impacts of new mining in the study area with respect to the following: W-270

A. Regional Environment

    1. Soils
    2. Water resources
    3. Air resources
    4. Vegetation
    5. Wildlife and fisheries
    6. Land use
    7. Recreation resources
    8. Aesthetic values

B. Regional Employment, Economic Activity and Tax Revenues

C. Domestic Fertilizer Supplies and Prices

D. Importation of Phosphate and the National Balance of Payments

All of the above factors are currently addressed by Section 5 of the Draft EIS in less than two double-spaced pages by employing vague generalities and unstated assumptions.* The Council on Environmental Quality has recently called for greater emphasis on analysis in the EIS process. The need for expanded, more vigorous analysis in this portion of the Draft EIS is both obvious and imperative. W-271

* As an example, Section 5 begins by asserting that there is a "tradeoff" between adverse environmental impacts versus "low-priced fertilizer for enhanced agricultural production" as well as "reduction in U.S. trade deficits." In the context of analyzing the short-term and long-term impacts of new mining, this approach amounts to comparing environmental "apples" with economic "oranges." There appears to be no basis in the Draft EIS for the assumption that new mining will result in "low-priced fertilizer" for either domestic or foreign agricultural production, nor is there any serious attempt to address short-term versus long-term effects of more rapid depletion of domestic phosphate supplies upon the nation's trade deficit. W-272

IMPLEMENTATION

The implementation of the recommendations of the Final EIS is of paramount concern. Accordingly, the EPA should clearly identify: 1) the specific agencies which will be responsible for implementing actions, and; 2) the specific actions called for by the Final EIS. W-273

A particularly critical facet of the area-wide study was the impacts predicted by the chosen scenario. The predicted impact on water quality assumes that the industry will have to meet Florida effluent guidelines. Since the Draft EIS recognizes the necessity of applying Florida guidelines, which are more stringent than the Federal effluent guidelines, and in order that future impacts not exceed predicted impacts on water quality, the Final EIS should recommend that the Federal government adopt Florida standards. W-274

Because of limitations in funding, scope of study and/or lack of data, many areas of concern have been left up to the site-specific EIS's. It is, therefore, recommended that a separate Section be devoted to specifying critical matters which must be addressed in the site-specific efforts. W-275

It would not be the intent of this Section to cast in concrete the scope nor the technical approach to all site-specific EIS's, for each one will have to address some problems unique to that site, but merely to make sure that important parameters, which are identified in the Area-wide EIS, are not overlooked. These considerations are currently scattered throughout the Draft EIS text in a manner which is helpful to neither the industry nor the regulating agencies.

The implementation of reclamation is of particular importance. The Final EIS should identify means for preserving the benefits of reclamation, once reclamation has been achieved. It would be disappointing for instance if, after large sums of money had been expended by the industry and by the regulatory and advisory agencies to restore particularly valuable habitat, reclaimed land were to be sold for some land-use which would, once again, result in habitat devastation. Therefore, the Final EIS should recommend mechanisms, such as the use of restrictive covenants, to insure the maintenance and protection of ecologically significant habitats, including wetlands. W-276

McNeill

MARY L. JELKS, M.D.
PEDIATRICS
1700 SOUTH OSPREY
SARASOTA, FLORIDA 33579

TELEPHONE (813) 366-2002

(DIPLOMATE OF AMERICAN BOARD OF ALLERGY AND IMMUNOLOGY)

(DIPLOMATE OF AMERICAN BOARD OF PEDIATRICS)

June 20, 1978

Mr. John Hagan
U. S. EPA Region IV
345 Courtland St
Atlanta, Ga. 30308

Dear Mr. Hagan:

Re: Phosphate EIS

1. The health effects of radiation from the phosphate mining have not been adequately investigated. For instance, no castigation of the recent omission of requirement for alkalinization of washings which would decrease radiation hazards. 'Immediate economics' seems to dominate the policy of your present administration without regard of health effects or eventual costs. W-277

2. The impact of air pollution of power development for the activity of mining has not been addressed. The sulfur oxides which when exposed to the high ozone will give serious health hazards of sulfates to populations who will not benefit from the rewards of the profits of the activity. Power sources have additional hazards since energy problems have shifted to the fuels with higher sulfur contents. Florida is a delicate environment where, heat, humidity and sunlight will increase the reactivity of this combination of air pollutants to be more hazardous. W-278

3. The monitoring of florides has been inadequate and there is little control of its emission from the gypsum ponds. W-279

4. The emotional appeal of fertilizer to feed the hungry world is full of fallacies. The state of Florida has a very small percent of the available phosphate of the world. Phosphate fertilizer is not the only means of increasing productivity of soil. There is poor distribution of the already over productive materials with waste in our fertilized farmlands. The uncontrolled mining activity taking place today, resulting in vast wasteland areas, with removal of most of our resources of phosphates to a depleted state, with simultaneous health hazards, water depletion and destruction of a naturally beautiful land, to gain a few short lived economic deals, will reveal the lack of concern we have for our country's future. W-280

Please consider these omissions and recommend further appraisal of the phosphate mining activity with some federal scrutiny of this industry which has powerful lobbyists to tend to blind adequate state monitoring. (In all fairness, only the federal level can access radiation problems, since the state is lacking personnel in this field.).

Sincerely,

M Jelks

M. L. Jelks, M.D.

3-218

Mc [illegible]

General Development Utilities, Inc.

June 22, 1978

Mr. John Hagen III
Chief, EIS Branch
Environmental Protection Agency
Region IV
345 Courtland St., N.E.
Atlanta, GA 30308

Dear Mr. Hagen:

General Development Utilities, Inc. has under construction a regional water treatment plant on the Peace River in DeSoto County, Florida. The plant will be placed in operation in early 1979.

A review of the Draft Areawide Environmental Impact Statement on the Central Florida Phosphate Industry causes us great concern. Some of these concerns were independently addressed by other speakers at the three public hearings. Comments follow on two areas of vital interest to the Utility, water quality and quantity in the Peace River.

Section 3 of the Draft Areawide Environmental Impact Statement refers to parts of other scenarios that modify Scenario 2.11 (Permit Existing and New Sources) as well as other mitigative measures. Supplements of impacts are provided in Section 3 for impacts described in Section 2.D.

As a downstream user of Myakkahatchee Creek (Big Slough) and a future user (early 1979) of the Peace River, General Development Utilities, Inc. is concerned about water quantity and quality. The impacts described in the draft about quantity are not considered to be adequately or clearly represented. Since quantity and quality may be related, a similar concern exists for quality.

On page 3.4, 3a briefly discusses quantity by informing the reader that decreased surface flow is expected, followed by an increase. No time periods are mentioned. No quantities are estimated. The reader must then refer to Section 2.D to glean more information.

1111 South Bayshore Drive Miami Florida 33131 Telephone 305 350 [illegible]
A General Development Subsidiary

On page 2.56, a statement was made concerning the net loss of surface runoff due to evaporation in containments or impoundments. These losses were estimated to be 15 cubic feet per second (c.f.s.) by 1985 and 21 c.f.s. by 2000 in the Peace River. Some questions arise from these estimates.

1. Are the estimates annual numbers?
2. Do these estimates vary seasonally? How much?
3. What are the estimates for direct loss due to containment or impoundment? W-281
4. How will reclaimation affect the quantity and quality of runoff? How much more or less?

Similar questions exist for the required reduced water usage scenario, particularly with regard to the impact on downstream users about quantity that is retained and must be addressed in much more detail to assess impacts on downstream users. W-282

On pg.257 EPA suggests that the alteration of stream flow through 1985 is minor, but by 2000 noticable. The draft also states that changes in freshwater discharge to estuaries are relatively minor and obscured by variation in normal discharge. This statement of virtually no impact to the estuary is puzzling. Many agencies, state and federal, are concerned with the impact of water loss to estuaries and some have required extensive studies for losses of freshwater. EPA should consider again their position about impact to Charlotte Harbor and whether the topic deserves study as part of the generic impact of the phosphate industry. W-283

One secondary effect of the southward expansion of the phosphate industry is increased use of electricity. The proposed Florida Power and Light power plant in DeSoto County near the Peace River would supply some of the new electrical demand. At the same time, large amounts of water would be diverted from the Peace River to a man-made lake for cooling purposes. This impact on water quantity in the Peace River caused by power needs of the phosphate industry is not adequately assessed either for downstream use or environmental changes that may occur in Charlotte Harbor. W-284

General Development Utilities, Inc. has a potential service area that would require it to serve approximately 300,000 persons from its Peace River Water Plant. The interests of these utility customers in obtaining a sufficient quantity of safe potable water is directly tied to activities affecting the Peace River and we request that the Draft Areawide Environmental Impact Statement on the Central Florida Phosphate Industry adequately address protection of these interests.

Sincerely yours,

Harold E. Schmidt

Harold E. Schmidt
President

HES:lmb

Certified # 8515-97

P.O. Box 1097
Riverview, Fl. 33569
June 21, 1978

Dear Mr White,

This letter is in regards to the DEIS Cent. Fla. Phosphate Industry. As a citizen & Alafia riverfront property owner in Hillsborough County, there are many questions in my mind concerning the industry & it's practices.

I would appreciate a reply to this letter answering my questions.

I can not understand why "it is reasonable to assume that W-285 the floodplains & wetlands will be mined in the future". In speaking with the experts (U.S.G.S. & Dept. of Int. Wetlands Inventory office in St. Pete. Mr. Porter B. Reed, Jr.) I understand that any mining in the wetlands & tributaries would be unthinkable. There are many wonderful things that happen in the river wetlands & tributaries. Endangered species gather in it's refuge,

3-222

etal, the American Bald Eagle, The Panther, Suwanee Cooter, Wood Stork, Sandhill Crane, please refer to Archibald Station, 7 county region central Fla. Phosphate Industry. The rain and runoff from higher ground is caught in the wetlands systems to be naturally filtered into the Fl. Aquafer. Part of the water in the wetlands is raised up again as moisture for rain. I can not comprehend the "assumption" that private industry could be allowed to mine these areas. W-286

I am hearing via media there is a conflict at Fla. Power St Pete with warm water runoff. Are the wetlands & tributaries not just as important?

I applaud the EPA stand on Fla. Power, please take measures to preserve the wetlands & tributaries of our rivers, not only for the wildlife, but for future generations to enjoy & behold a "running river". W-287

We have had problems in the

past with Gardiner tapping the natural springs in the Alafia, (Lithia & Buckhorn) decreasing natural cleansing & water flow. We have had problems with Brewster, please see enclosure.

E.P.A. Should have the wherewithal to stick up for the little people of this nation in the face of lobbyist & politics of private industry. Why should we ASSUME anything? Why Should private industry have the right to ruin things upriver meaning, wetlands, tributaries, Fl. Canoe Trail, critical Habitats, 25, 50, & 100 year flood plain & the very vital working systems of our running waterways?

Why Should they be allowed to mine everything in the U.S. before mining that that they own are scarce? We don't want another oil crisis?

Please note and investigate further the fact that replacing river wetlands & tributaries with lakes & reservoirs will not make the

River Run, nor will it protect the property & lives of people downstream when the flood plains are gone or altered.

My questions and fears are very real, Mr. White, these are critical in that our town was created & settled on the Alafia & named Riverview for this reason. The future of our rivers is in your hands & our trust is in you.

This letter is written on behalf of 57 neighbors.

I thank you, Mr. White!

With sincere regards,

Martha Kjeer

Please reply to:

MRS. MARTHA KJEER
P.O. BOX 1097
RIVERVIEW, FL. 33569

[illegible]

[illegible]

AN OFFICIAL EXPRESSION OF OPINION BY TELEVISION STATION WTVT
WTVT 3213 W Kennedy Boulevard, P. O. Box 22013, Tampa, Florida 33622
Tampa (813) 876-1313, Pinellas 461-1313, Polk 523-1313, Sarasota 747-1313

CRAWFORD P. RICE
EXECUTIVE VICE PRESIDENT
GAYLORD BROADCASTING COMPANY
GENERAL MANAGER, WTVT

RAY DAUTELER
DIRECTOR OF PROGRAMS
NEWS AND PUBLIC AFFAIRS

HUGH L. SMITH
NEWS DIRECTOR

CYRIL G. SMITH
EDITORIAL RESEARCH

VOLUME XXI, NUMBER 39 FEBRUARY 21, 1978

BREWSTER PHOSPHATE KEEPING PROMISES?

You would have thought that after the big spill which muddied the Alafia River last August, the Brewster phosphate company would have leaned over backward to prove that it was a freakish, one-time accident, not an indication of the company's true attitude toward the environment and other people's rights. But now comes a report from the Hillsborough County planning staff which claims that, to quote directly,

> "The most recent instances of non-compliance, rather than being isolated violations, are part of a pattern which spans two years."

Among the recent instances referred to are the building of an 800-foot dam, the destruction of 50 acres of trees, and the excavation of a creekbed. The planning staff report claims the Brewster firm violated both the county mining ordinance and the commitments it made to get a state permit as a "Development of Regional Impact."

ART CARD
OF BOOKLET

It also seems to violate promises made to the public in this booklet published at the time, which repeatedly states that flood plains will not be altered or affected.

We understand that in any project of this magnitude...mining 50-million tons of ore from almost ten-thousand acres of land...there are bound to be occasional problems, even with the best of intent. But these incidents seem to go beyond that. We were willing to give Brewster the benefit of the doubt after last summer's spill. Now we suggest it's time that this company and all others mining the land in this area, be put on notice that making promises is not enough. They must also live up to them.

* * *

3-226

United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

In Reply Refer To:
ER-78/339

Mr. John C. White
Regional Administrator
U.S. Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30308

Dear Mr. White:

We have reviewed the draft statement for the Central Florida Phosphate Industry sent to us April 7, 1978. We have extensive and serious concerns as to the adequacy of the document from both our jurisdictional responsibilities and our several areas of expertise. Interior reviewers were unanimous in their criticism that the organization and analysis in the statement were highly confusing.

The statement should indicate that review and approval of any New Source NPDES or Section 404 permits require consultation with our Fish and Wildlife Service. The statement should also reflect recognition of EPA's responsibilities, and indicate how they will be discharged, under the following laws or Executive Orders:

Endangered Species Act of 1973

E.O. 11593, "Protection and Enhancement of the Cultural Environment"

E.O. 1190, "Protection of Wetlands"

The statement does not present a clear, coherent identification and analysis of impacts that may be reasonably expected to occur on resources of the area. This is particularly true in regard to archeological and historic values; recreation values, including a possible scenic river, and projects established with the aid of Land and Water Conservation Funds; water resources, including both groundwater and surface water; W-289 and wildlife. Discussion of the hazards and possible impacts from radioactivity are especially confused and ambiguous.

The statement (pp. 1-70, 4-3) that the Department of the Interior intends to apply regulations under the Surface Mining Control and Reclamation Act of 1977 to any surface mining involving federally controlled lands is in error. Section 709(a) of the Surface Mining Control and Reclamation Act of 1977 (30 USC 1201) directs the Chairman of CEQ to contract with the National Academy of Sciences-National Academy of Engineering or other Government agencies or private groups "for an in-depth study of current and developing technology for surface and open pit mining and reclamation for minerals other than coal designed to assist in the establishment of effective and reasonable regulation of surface and open pit mining and reclamation for minerals other than coal." The Department of the Interior is awaiting the results of this study. W-290

Finally, the presentation of the proposed action, on pages 1.70-1.72, is highly misleading. The reader is led to believe that rock-drying processing at beneficiation plants and conventional aboveground slime-disposal areas will be eliminated and that fluorine compounds and uranium oxide will be recovered. However, in some cases, it may not be possible for present purchasers of phosphate rock to use the wet material. Elimination of the aboveground slime-disposal areas is dependent on the sand-spray dewatering system developed by Brewster Phosphate Company. This method is dependent on the sand/clay makeup of the matrix and cannot be universally applied. The impact analysis (pp. 3.8 and 3.9) indicates that some of the uranium may be recovered, but no recovery of the fluorine is expected. Recovery of these is entirely dependent on economics. W-291

We are providing extensive comments and suggestions for your consideration and use in preparing the final statement. In this regard, we strongly urge that EPA reconsider the decision, as expressed in the transmittal letter of April 7, 1978, to not reprint material contained in the draft statement. Because of the ambiguities, disconnected analysis, and extensive errors in the draft, it is doubtful that NEPA requirements can be satisfied in this case by limited revisions and responses. We will be glad to assist as necessary in the areas where we have expressed concerns.

We appreciate the opportunity to review this statement.

Sincerely,

SECRETARY

Enclosures

Review and Comments on DES for Central Florida Phosphate Industry

The following comments elaborate on and provide specific details as to the concerns identified in our letter. The order of discussion generally follows that in the letter.

Archeological and Historical Sites

The statement acknowledges some 701 known archeological and historical sites in the survey area. At a minimum, four could be permanently altered or destroyed if mined. However, we find no mention of "systematic survey" which could substantially increase the number of archeological and historical sites impacted by the proposed action. Consequently, the concerns of the Florida Division of Archives, History and Records Management appear valid in that discussion of mitigative measures to protect Florida's archeological and historical resources is almost non-existent and grossly insufficient. We, therefore, recommend that the final environmental impact statement contain in-depth discussion of alternatives to include the avoidance of any impact on Florida's archeological resources. We suggest that the Environmental Protection Agency consult with the State Historical Preservation Officer, Advisory Council on Historic Preservation, and the Office of Archeology and Historic Preservation to determine regulations and guidelines for the protection of cultural resources. W-292

In conclusion, the 7-county area described in this report is sensitive as far as paleontological resources are concerned. The final ES should have some reference to the presence of these resources as well as suggested mitigating measures to protect them. Dr. Webb (Florida State Museum in Gainesville) should be able to provide information on this subject.

Recreational Resources

With regard to impact on recreational opportunities, the exact locations of the slime ponds are not identified. However, discussion in the statement indicates that slime placement poses a potential for adverse impact on the water quality and thereby the recreational potential of Peace River and Lake Myakka. Please note that Peace River meets all requirements for scenic river classification. Further, Lake Myakka is considered to be of major recreational significance and is now the site of recreational projects established with help of the Land and Water Conservation Fund. Consequently, the proposal's actual impact on recreation opportunities cannot be determined without specific information; e.g., maps depicting recreational opportunities in relation to slime pond placement. W-293

Water Resources

The changes in potentiometric head likely to result from various alternative scenarios are discussed in detail, but potential impacts of these changes should be given more consideration. These are saltwater encroachment, upconing of mineralized water, changes in lake levels in the Ridge area, and reduction in available freshwater supply in coastal areas through interception of ground-water flow before it reaches these areas. These are the real concerns in the area; the lowered heads are of concern principally because they may lead to one or more of those impacts. W-295

Reference is made in several places to increasing the potential for saltwater encroachment, and to "theoretical" saltwater encroachment (e.g., p. 64 through 2.67, 2.74, 2.75), but no assessment is given as to the likely reality, magnitude, or seriousness of this phenomenon. Quite likely, data are not available to assess quantitatively the times, distances, and locations of possible encroachment, but we believe the investigators have the responsibility of making some judgments and of putting this possibility in perspective. If no judgment can be made, because of lack of data or understanding of the system, this, too, should be stated, indicating that saltwater encroachment remains a possibility that needs further evaluation.

The analysis of effects on the ground-water resources of Manatee and Sarasota Counties appears to be restricted to an assessment of changes in the potentiometric surfaces of the artesian or confined aquifers. We suggest that it should also include an evaluation of the possibility for interception or "short circuiting" of unconfined ground-water flow toward Manatee and Sarasota Counties as a result of pumping for phosphate mines.

Another problem related to groundwater is contamination of the aquifer. This may result in two ways. First, mineralization of groundwater is a definite possibility. This can occur through depletion of the aquifer, as was alluded to above, or by seepage from slime ponds and cooling-water ponds. Secondly, radiation contamination of the groundwater is a legitimate concern. The DES states that the efficiency of an "impervious membrane lining" to be used in ponds cannot be projected, because insufficient data exists. Since this could have very significant effects on the aquifer and the areas dependent on its supply and purity (e.g., springs originating in the aquifer discharge into the Hillsborough and Alafia Rivers which, in turn, serve as supplies for the local population), W-296 the potential for radiation contamination should be examined in much greater detail. This is obviously not the sort of problem one would want to deal with after the fact; consequently, mineralization and radiation impacts on groundwater should be fully evaluated in upcoming environmental statements.

Surface water is also not dealt with as completely as it might have been. The natural waters of westcentral Florida are already above "recommended" levels for phosphorous (p. 1.28), so additions from the new mines would speed the eutrophication process. Moreover, because several cities and counties rely on surface flows for water supplies, their maintenance is critically important. The DES indicates that pollution control equipment will be employed to prevent damage to surface flows, but there is no elaboration concerning the exact nature of this equipment. What it is, availability, how it works, and how successful has it been in the past are the type of questions that would provide the supporting information necessary to fully evaluate this impact. W-297

The DES also points out the potential for extremely damaging pollution loading to surface water through failure of a slime-pond dike (p. 2.83). Since this might impact on Class I waters, preventing such an occurrence is vitally important. The statement details the methods that will be used to control this situation (p. 4.4), but more information about the actual systems would be useful to assess their capabilities and to suggest alternatives. W-298

Wildlife Resources

Some of the habitat types (particularly those crucial to wildlife and endangered species) should be mapped. Much attention is given to wetlands in the DES, but little definition is given to important terrestrial habitat areas that may need protection. W-299

We feel that Section 3 in the statement is most deficient in the summarizing the impacts on fauna and flora outside of wetlands and the man-made environment. Plate 1 shows that only a small percentage of the area is wetlands. While it is true that phosphate mining will have its greatest impacts on wetlands, the impacts on other communities need to be more thoroughly addressed in the statement.

An extensive study for the FWS by the Archbold Biological Station of Lake Placid, Florida, drew a number of important conclusions regarding the continuation of phosphate mining into new portions of the study area and current reclamation W-300 practice on these mined lands. The following is a summary by the FWS of these conclusions:

1. Most phosphate mining activities are adverse to wildlife.
2. Present reclamation techniques favor a reduction of species diversity and establishment of a less valuable assemblage of generalized species.
3. Mining effects on wildlife include some impacts far removed from the actual mining site.
4. Those species having a restricted habitat (ecologically sensitive) are affected the most.
5. Continued mining development, combined with other habitat losses, would result in a serious reduction in diversity and abundance of wildlife in the study area.
6. Although recent reclamation proposals provide methods for greater variety of habitat, these remain largely unimplemented.
7. Reclamation directed toward establishment of few adaptable species would do little to minimize mining impacts in the area.
8. Unless proper land use controls are implemented to prevent degradation of habitat after reclamation, any improved reclamation efforts would be useless.

Special actions on the local, county, regional, and State level will be required in addition to any EPA regulatory conditions imposed on new sources. Changes in reclamation practice are needed on currently disturbed mined lands before additional habitat losses occur in new mining areas.

An extensive proposal by the FWS described in a recent paper entitled, "Recommendations on Central Florida Phosphate," is being circulated in the study area. A cooperative development and demonstration program on reclaiming phosphate mined lands to wetlands and forest habitats is now underway in the study area. The Florida Game and Fresh Water Fish Commission is the lead agency on this program. Partial funding and participation is also being provided by the FWS, the Florida Phosphate Council, and some phosphate companies. Other groups, agencies, and phosphate companies may also join the effort soon.

Radioactivity Hazards

W-301

The treatment of radiation effects of the industry is confusing. This may be due to the scattering of radiation data throughout the statement and the peculiar use of the term, "background radiation," as including the effects of the industry. There is no single section where all radiation effects of the industry are evaluated together and where they are compared to a background radiation not affected by the industry. Some quantitative data on radiation exposure is presented here and there, but it is also stated that quantifying population exposures "was considered beyond the scope of this program" (p. 2.64, par. 1). The reason why a comprehensive quantitative analysis was not considered necessary is not given. Presumably the radiation effects of the industry do not significantly raise population exposures and presumably this can be adequately demonstrated by the available data. However, this is not made explicit in the report.

Thus, discussion of exposure via the airpathway in Section 1 provides some quantitative data from two separate sources but provides no measure by which these effects can be added, nor does it assess their significance (p. 1.51, par. 1). It is also not clear whether the data in Table 1.18 (p. 1.51) refers to total emissions from a typical plant or from the whole industry. In Section 3, radium-226 emissions from a single dryer are given (p. 3.6, par. 1) that are more than 10 times greater than the total shown in Table 1.18 as "associated with chemical processing."

The radiation effects at processing plants are not adequately discussed. Gyp-stacks or gyp-ponds at plants are variously mentioned but their long-term effects are nowhere discussed. Gypsum is indicated to contain elevated concentration of radium-226 and the long-term management or reclamation of the gyp-stacks and gyp-ponds therefore represents an effect in the area that will persist long after the processing plants have ceased operation. Jurisdiction over the disposal of these wastes should also be discussed.

Housing built on reclaimed minelands is indicated to potentially expose inhabitants to elevated levels of radon-222 and its daughter products (p. 1.51). Techniques to mitigate this problem are mentioned (p. 2.86, par. 3) but the jurisdiction or regulatory authority to assure mitigation is not discussed.

Phosphate Data and Technology

The Bureau of Mines has recently updated phosphate reserve and resource data. Some of the tables shown in the study should be replaced with updated tables currently available. Several places such as Table 2.1, page 2.11, use 1975 data and pages 1.3 and 2.10 use 1977 data. The attached Table 2, dated May 1978, shows an increase in United States reserves of about 1 billion metric tons compared with Table 2.1. Also attached are reserve data for Central Florida. The increase of more than 400 million metric tons should be reflected in Table 1.1, page 1.3, and Figure 2.3, page 2.9, of the study. W-302

It is proposed on page 1.70 that new sources eliminate the rock drying processing at benefication plants and transport wet (6 to 20 percent moisture) rock to chemical plants. This could curtail our phosphate exports and have an adverse impact on our balance of payments.

In 1977 the U.S. exported 13.2 million metric tons of phosphate rock. All of this exported rock was dried except for 68,000 metric tons exported for use in electric furnaces in Canada. Ordinarily, overseas consumers do not have facilities to wet grind or dry imported wet phosphate rock. These consumers would be faced with alternatives to construct terminals for handling wet rock and drying facilities or turning to other sources for dry rock. Our export markets may then be forced to choose between building facilities to handle and dry the wet rock and buying from another source. W-303

The statement on page 1.51, "Additional exposure is possible due to dust generated by the drying of phosphate rock and by chemical processing" is not supported by available data. Emissions of particulate matter and any associated detectable radiation are controlled with wet scrubbers. The proposal to eliminate drying plants at all new mines in Florida assumes that systems exist to ship wet rock to export markets. Although the benefits of wet rock grinding are clear if the phosphoric acid plant is designed to digest wet rock, it is also clear that restricting drying of phosphate rock may exclude foreign markets for new mines in Florida and decrease the competitive position of exporters of rock from Florida. Also, it is not clear how wet ground rock can be shipped to port, how it can be loaded on a vessel, and how, after the vessel leaves Florida's temperate climate, frozen ground wet rock can be unloaded and stored in subfreezing climates either in the Orient or Western Europe. It should be noted that wet scrubbers or bag houses are available to control emissions from rock grinding and drying plants. W-304

The proposal to use a "dry conveyor" for deslimed matrix from mine to beneficiation plant cannot be supported by the recent history of this conveyor at the Fort Lonesome mine. The phosphate industry has stored waste clay slimes behind dams in mined-out pits because it has been the most economical procedure to follow. When, on occasion in the past, a dam failed because of incorrect construction or inadequate maintenance, the impact was serious on surrounding waters. With proper construction techniques and adequate maintenance programs no significant dam failure has occurred in recent years. The technology to rapidly dewater the colloidal clays has been elusive to both government and industry investigators. Some success has been achieved by Brewster's sand-spray system and the Bureau of Mines' efforts to classify the slimes further and recover a concentrate from the coarse fraction by flotation. Alternative systems to return waste clays to mined-out areas will be developed, particularly if the economics become more attractive. W-305

The Bureau of Mines has concern for the lost P_2O_5 values in the waste clays. Depending on the dewatering system used, these values could be lost forever. At its Tuscaloosa Metallurgy Research Center, the Bureau of Mines has current research underway toward recovering P_2O_5 values from the slimes. State Legislation (H.B. 1370) also addresses this important point "to establish methods for better and more efficient phosphate recovery mining and processing in this State as it may determine most beneficial to the economy, environment, and way of life of the citizen of the State." The categorical elimination of above ground slimes disposal areas may not be in the best interest of the United States until exhaustive research is conducted to determine if these phosphate values can be recovered. W-306

In 1978, the Governor of Florida created the "Phosphate Land Reclamation Study Commission" to report March 1, 1978, to the Governor and the Florida Legislature and to make recommendations toward solving some of the environmental problems associated with phosphate mining. These recommendations were included in a revision (H.B. 1370) of the Florida statutes, "The Severance Tax Act," signed into law on June 1, 1978. This set up the Florida Institute of Phosphate Research funded by a portion of the severance tax "to conduct or cause to be conducted thorough and comprehensive study of phosphatic clay disposal and utilization as a part of phosphate mining, together with all environmental or land use related thereto." We suggest that the final environmental impact statement recommendation for this element correspond with subject legislation. W-307

A USGS study[1] concludes that phosphate mines in Central Florida have not had an adverse effect on the supply of water from the Floridan aquifer available to Sarasota County. W-308

Finally, the expansion of the industry in Manatee, Hardee, and DeSoto Counties that was opposed by Sarasota County, has not occurred because of cost increases and a decline in prices in both domestic and international markets. There is no question about the fact that there is an oversupply of phosphate rocks in the world and it is a factor in restricting expansion in most producing countries. W-309

General

We believe it would be most helpful to provide a brief background and status of reclamation practices and a discussion of the county and State regulatory authorities and requirements affecting phosphate mining. More than 80 percent of the mined or minable areas in Florida are on private lands. The State of Florida has, until recently, played only a limited role in developing regulations and stipulating mining and reclamation standards. The first State mandatory reclamation requirements came as recently as 1975 and even with these requirements the surface owner plays a very central role in post mining land use choices. Since most of the private lands are owned by mining companies many critical reclamation decisions are made by the mining companies. However, both county and State governments are becoming increasingly involved in establishing regulations. A review of this would be most helpful for it may be desirable to interface some Federal authorities with those of the State and counties. W-310

While the measures taken to involve the public were documented, there was little discussion of the feedback that was gathered. The tabular scores of the steering and advisory committees in Table 2.8 do not, by themselves, do justice to the views of the public. We would like to see more narrative discussion of the attitudes and expectations of the local people in relation to phosphate mining. W-311

The scope and purpose of the statement are given very briefly only in the summary (p. i, last par.) and are not mentioned in the body of the statement. A full discussion at the beginning of Section 1 of the scope of the statement and its relation to the proposed action and to actions to be covered by site-specific environmental statements would greatly help to clarify what follows. W-312

---

[1] Simulated Changes in Ground-water Levels Resulting from Proposed Phosphate Mining, West Central Florida. - Open file report 77-882

The proposed Federal action which generated the need for this statement is not well defined. Specific pending permits should be identified and such permits that may be anticipated by EPA in the future should also be discussed. The action is given as a number of elements, described only in summarized format at the end of Section 1 (p. 1.70-1.74). The description of the effects due to these elements is then scattered in Section 2 under different scenarios that presumably are alternatives to the proposed action. When impacts for the proposed action are summarized in the very abbreviated Section 3, it is no longer clear whether all elements mentioned in Chapter 1 are still part of the proposed action. A better description of the proposed action, distinguishing aspects covered by this programmatic statement from those to be dealt with in site-specific statements, would clarify this matter. W-313

The impacts of the proposed action are equally difficult to follow. Despite its heading, Section 3 only supplements "the impacts described in Section 2D" (p. 3.1, par. 1). Section 2D, however, only gives the "primary effects" of the without-action scenario; the term "effect" was specifically defined to distinguish it from "impact" (p. 2.35, last par.). Apparently, this distinction was not carried outin the text. On the other hand, the distinction between "primary" and "secondary" effects is not clearly defined. Thus, there is no clear picture in the statement itself of what the significant impacts of the proposed action are considered to be. W-314

The paragraphs (p. 1.69-1.70) relating to responsibilities and authorities of the Department of the Interior with respect to leasing and mining of federally-owned phosphate need elaboration. As written, the public may reasonably conclude that present mining operations in central Florida involve Federal minerals, and that the Geological Survey exercises some degree of regulatory authority in the area. These passages should reflect that no Federal leases exist in the study area and thus neither the BLM or the Geological Survey has present regulatory authority over mining and reclamation in the area. The EPA should also consult with BLM on the matter of pending Federal lease applications in the study area, if any, and include that information in the final statement. W-315

Further, and in the same vein, this section of the statement should fully identify the major State and local governmental regulatory authorities and responsibilities which do govern present mining operations in the area, including the processing plants and all related environmental monitoring and surveillance. W-316

The five alternative scenarios and their impacts are described in a confusing manner, neither consistently presented nor identified throughout the report. The impact of the various scenarios on the man-made environment, and specifically on the local phosphate industry, is only examined in some detail for two scenarios (Table 2.14 on p. 2.61). The section on the environmental impacts of the proposed action (p. 3.1) is actually a supplement to impacts described for the primary scenarios in the previous chapter, rather than a comprehensive statement of impacts of the proposed action. The true choices and their impacts are not clear. W-317

Table 2.--Identified world phosphate resources
(Million metric tons)

	Reserves 1/	Identified subeconomic resources	Total identified resources
North America:			
United States	3,530	3,550	7,080
Other	---	100	100
Total	3,530	3,650	7,180
South America	450	500	950
Europe:			
U.S.S.R.	1,400	2,000	3,400
Other	15	30	45
Total	1,415	2,030	3,445
Africa:			
Algeria	50	500	550
Egypt	100	900	1,000
Morocco	10,000	30,000	40,000
Senegal	130	70	200
South Africa	100	4,000	4,100
Tunisia	300	400	700
Western Sahara	400	1,300	1,600
Other	200	200	400
Total	11,280	37,370	48,550
Asia:			
China, People's Republic of	100	100	200
Israel	60	40	100
Jordan	100	200	300
Syria	200	200	400
Vietnam	100	50	150
Other	100	100	200
Total	660	690	1,350
Oceania:			
Australia	100	1,900	2,000
Pacific Islands	100	30	130
Total	200	1,930	2,130
World total 2/	18,000	46,000	64,000

1/ Estimated reserves at 1977 costs and prices.
2/ Data may not add to totals shown because of independent rounding.

Bureau of Mines
May 1978

Million Metric Tons

County	Reserves	Identified subeconomic resources
De Soto	103	92
Hardee	426	433
Hillsborough	76	20
Manatee	263	217
Polk	602	138
Total	1,470	900

Bureau of Mines
May 1978

SPECIFIC COMMENTS

Page 1.11: The SO2 data is left in a cloud of confusion by the allusion to sampling problems. The sampling methodology and problems uncovered should be briefly described. W-317

Page 1.31, fig. 1.10: The reference should be to Shampine 1965. W-318

Page 1.34, 1.35: Data from gaging stations should be credited to the U.S. Geological Survey. W-319

Page 1.36, sec. d: The discussion of ground-water resources should include hydrogeologic parameters of the aquifer and confining bed: transmissivity, storage, leakance coefficient, and thickness. The lower confining bed of the Floridan aquifer should be mentioned. The reference to Wilson 1975 should be 1977a. W-320

Page 1.37, fig. 1.12: The Lake City Limestone is generally considered to be part of the lower confining bed, not part of the Floridan aquifer, in the study area, The scale at the right of the section is wrong. W-321

Page 1.38, last par.: It should be explained why the phenomena mentioned here are "important." W-322

Page 1.39: Declines of the potentiometric surface between September 1949 and September 1975 are not shown and thus the "center" is not documented. No evidence is given to support the claim that these declines are largely attributed to the phosphate industry. The roles of drought and pumpages for irrigation, public supplies, and other industry should be discussed. In the third line from the end of the second paragraph, "principally" should be substituted for "only." The model shows, for example, that the effects of phosphate pumping in Polk County extend beyond the county boundaries. W-323

Page 1.40: The potential for upconing of saltwater in inland areas due to lowering of potentiometric head should be discussed. No documentation is provided to establish that contamination from wells is a "much greater threat" (par. 2, line 1). W-324 While the initial paragraph on "water demand" identifies the many water users and Table 1.14 identifies on a county by county basis current and projected water consumption, this information would be much more valuable for developing a phosphate policy if it were broke out so that we would know how much is being used by the phosphate industry and how their projected activities might impact the fresh water supply. We understand that as much water is used for agricultural irrigation as for mining in this seven county study area. What part of the increased water usage will result from increased levels of irrigation? Also, is there a sensitivity scale that will help us understand at what point in the decline of the potentiometric surface of the aquifer will the "increased potential for salt water encoachment" (page 282) or upconing become a problem?

Page 1.41: Water demands, as used in table 1.14, should be defined. It would be useful in this table to give annual totals and corresponding net changes. W-325

Page 1.48, par. 1: It is stated that "the phosphate industry currently mines slightly more total uranium than does the uranium industry," but it is not clear whether this applies to United States or worldwide production. It is stated later that "At a full-capacity operation of 4,570,000 ton per year . . . the 12 phosphoric acid plants in operation in the 7-county study area would pass 4,570,000 pounds of U308 per year (approximately 19.4 percent of 1975 U.S. uranium production" (p. 2.25-2.26). Elsewhere it was stated that the Central Florida Phosphate District accounted for approximately 80 percent of U.S. production and 33 percent of world production in 1976 (p. 1.2, par. 2). While the foregoing statements regarding uranium are not necessarily contradictory, they appear to be, and they should be clarified. W-326

The section on radiation environment is written in such a way that the reader would assume that if U308 were extracted from the phosphate ore, radiation problems would be reduced. This conclusion is reinforced in the discussion of uranium extraction on page 2.25. The report is correct that uranium exists in Florida phosphate deposits. It is also correct that uranium is separated from waste products after the "initial digestion of phosphate rock by sulfuric acid." It is further correct that extraction will reduce the "radioactive materials in phosphate products," principally farm fertilizers. But, it is misleading and incorrect to suggest that the extraction of uranium will reduce the level of uranium (radio active materials) in gypsum piles, slime ponds or reclaimed areas. Uranium is lost just as phosphate materials are left behind in waste fractions. Uranium associated with any waste fraction will remain even if U_3O_8 is commercially extracted in the manufacturing of phosphoric acid. W-327

Page 1.51: The abnormally high radium - 226 level in waters underlying Sarasota County are referred to here and elsewhere in the report. It should be made clear that this is unrelated to the phosphate occurence and the mining activities. As the statement now stands, reference to this concentration is confusing. W-328

Page 1.52, 1.53: The age-adjusted mortality comparisons are not clear; 37.98 for white males (nationally) and 44.93 for Florida (does this include non-whites?) W-329

Page 1.54, table 1.24: More recent employment and income information is available in such publications as "County Business Patterns" and the multipliers that were used to cite the effects on employment, income and output (page 1.5) have been revised by the Regional Economic Analysis Division of the Bureau of Economic Analysis, Department of Commerce. W-330

Page 1.65: Any sites eligible or nominated for listing on the National Register? W-331

Page 1.71 and 2.76: The continued use of connector wells included in the proposed action should be more adequately discussed and evaluated, preferably with reference to successful experience. The scope and impacts of the wastewater injections to which reference is made on page 2.76 should be more fully explained. If connector wells are included here, it should be so stated. The possibility of increased sinkhole or limestone-solutioning activity as a result of declining water levels in areas now having a high water table should be evaluated. Increased exposure of walls of solution openings or rock joints to infiltrating water charged with carbon dioxide from soil and atmosphere will promote solutioning. The greatest number of solution openings being formed should be near the water table. Thus, lowering the water table should make solutioning more effective at somewhat greater depths. The statement should include the map of the potentiometric surface for 1975, to which frequent reference is made, since all the simulated potentiometric surface maps intended to show effects are based upon the 1975 data plot. W-332

Page 1.72: In addition to providing definitions for "3 categories" of wetlands we believe it would be most helpful to identify those areas whithin each category as soon as possible. We would assume mining would be restricted in those areas which "serve essential environmental functions" and all would be better served identifying those "critical areas" before mining plans are submitted in areas which will be classified as unsuitable for mining. W-333

In sub (b) a recommendation is made to line "gyp ponds" with an imperious material unless it can be demonstrated in the site-specific EIS that such lining is not needed. On page 2.87 the report states that the impact of such action can not be assessed because "insufficient data exists to quantify seepage from these already in existence." W-334

From our reading, that is the only statement in this report that even suggests that there is any seepage problem. Rather than imposing a requirement where neither the benefits nor costs (page 2.26) are known, it would seem more appropriate to recommend further study to better identify the problem. If one exists, it would be of a generic nature and requirements on existing as well as new sources should be established on that basis.

Page 1.74: It should be noted that the slight increase in total fluoride emissions over the past several years parallels the increase in phosphate production and processing in the area. W-335

Page 2.4: The use of dry conveying of matrix has not been proven as a satisfactory alternative to pumping slurries. The matrix is deslimed before conveying. W-336

Page 2.5: Under 2.14 A, wetlands have been defined in E.O. 11990. This definition should be used for consistency, rather than EPA redefining the term. W-337

Page 2.8: The units used for production rates should be given. The symbols in parentheses should be explained. W-338

Page 2.12, fig. 2.3: The USGS pumpage total for phosphate chemical plants in the modeled area is 128 mgd for 1975 (revised from 13.5 mgd in Wilson's report) compared to 93.04 mgd for 1976 reported by EPA. The 1976 mines pumpage (259.29 mgd) is higher than the USGS value used in the model (174 mgd). W-339

Page 2.19: The Bureau of Mines does not consider the flocculation method operational yet. W-340

Page 2.40: The reader would readily conclude from reviewing this discussion on physical environment that mining severely damages the soils and destroys much of its usefulness. To state that mining "destroys soil in terms of its original identification characteristics" is accurate but not necessarily useful. We believe that an assessment of this soils change would be a most appropriate and useful tool for better understanding and solving of mining and reclamation problems. W-341 "soil characteristics." Then, an assessment of the impact of this change should be made. Furthermore, while it is useful to note that "high potential agricultural lands" will be disrupted, that statement is not sufficient in itself. We should also know how long it might be disrupted and if it can be returned to its previous productive capabilities. We should also determine if all "high potential" lands are intensively managed. These factors must all be considered in any loss assessment.

Page 2.42-2.43: In the discussion of the impacts of mining on the biological environment there is simply a listing of all possible negative factors. These conclusions are not consistent with the March 1978 Fish and Wildlife Service report on Osceola which stated clearly that there could be many beneficial effects from mining and reclamation. W-342

Page 2.45, Sec. 3a: The reference to Wilson should be changed from 1977 to 1977b. W-343

Page 2.46, par. 1: It is not clear how the "inability to compare effects is a distinct disadvantage." W-344

Page 2.46, par. 2: The reference to Wilson should be changed from 1977 to 1977b. W-345

Page 2.46, par. 3: The range of "8x2 miles and 6x6 miles" should be changed to "7.5x2 miles and 5x5 miles." It should be stated that a no-flow boundary is a special case of the constant-flow boundary. W-346

Page 2.46, last par. and page 2.47, first par.: This paragraph is confusing and should be revised. It seems unnecessary to introduce the terms "time-dependent" and "time-independent," "input and output parameters," and letter symbols which are not used again. If sources and discharges of water are to be discussed, upward leakage should be included as a discharge. In the last sentence, "amount" should be changed to "rate," and "coefficient" should be inserted after "leakance." W-347

Also, pumpage and recharge are both cited as inputs; this cannot be correct.

Page 2.47, last par.: Although in calibration the intent is to match the simulated heads with the observed heads, too much emphasis is often placed on the exactness--or inexactness--of the match; a note should be added that generally the difference between simulated and observed heads can be accounted for by a reasonable range in error in one or more of the input parameters. In line 5, it is not clear why or how the simulated heads are "significantly" lower. The last sentence beginning on page 2.47 is not necessarily true; a highly unreliable parameter might also be very insensitive and thus have little bearing on the accuracy of the results. W-348

Page 2.48, par.3: It is not clear why the distribution of transmissivity was of "major concern." After trying various other transmissivity values for the southwestern part of the area, 80,000 ft2/d was retained as the best for calibration purposes. Possible errors in transmissivity in that area may be more related to errors in the observed potentiometric surface. We know of no evidence to indicate that transmissivity increases from north to south and from east to west. The reference (Wilson, 1977) should be changed to (Wilson, 1977b). W-349

Page 2.49, par. 1: The first sentence is misleading. The pumpages by agriculture and municipalities were held constant to assess the effects of the phosphate industry alone. It was not assumed that they actually would remain constant. Similar procedures are also being followed to assess the effects of agriculture and of municipalities alone. W-350

Page 2.49, par. 2: The decline predicted for an area near Ft. Lonesome was more than 2 feet. To make it easier to follow descriptions and present a ready visual expression of declines and rises it would be helpful to include the potentiometric change maps from Wilson's (1977b) report. W-351

Page 2.49, par. 2: The categorical statement that pumping will decrease streamflow, etc., is not substantiated. The possible declines of lake levels as a result of mining activities is a subject of current concern in the Ridge area; thus, additional declines in the potentiometric surface could aggravate the situation. An assessment should be made of the magnitude and importance of effects on these lakes and on the population of the Ridge area. It has been found that many of the lakes recharge the Floridan aquifer, particularly when surrounding ground-water levels are declining. 1/ Thus, a "worst-case" analysis can logically be based on fluctation of lake levels paralleling computed changes in the potentiometric surface. W-352

1/ a. Kohout, F. A., and Meyer, F.W. 1959, Hydrologic features of the Lake Istokpoga and Lake Placid areas, Highlands County, Florida: Florida Geological Survey Report of Investigations no. 19, p. 65.

b. Stewart, H. G., Jr., 1966, Ground-water resources of Polk County Florida: Florida Geological Survey Report of Investigations no. 44, p. 1.

c. Stewart, J. W., 1968, Hydrologic effects of pumping from the Floridan aquifer in northwest Hillsborough, northeast Pineallas and southwest Pasco Counties, Florida: U.S. Geological Survey Open-File Report, p. 118.

Upconing of poor-quality water from the lower part of the Floridan aquifer through abandoned wells that have not been properly plugged is discussed here and on page 2.81. The statement should include some assessment of the severity of this impact and, if possible, offer some suggestions as to mitigation. The impact analysis should also include at least a brief evaluation of the potential for impacts on the human environment from leakage of mineralized water because of the regional character of effects of the proposed phosphate industry activities. W-353

In the second sentence of this paragraph, delete "Unfortunately." W-354

Page 2.50: The value given for lower Floridan, 196 picocuries per liter does not jibe with values on Table 2.10. W-355

Page 2.61: Impact analysis should include the costs of dislocation of the labor force and the social costs involved in unemployment. W-356

Page 2.61, table 2.14: Since the losses in induced payroll were based on 1967 dollars, the total effect was underestimated by at least 50 percent. Based on actual wage rates this could amount to as much as $100 million in underestimation. W-357

Page 2.65, fig. 2.10: The boundary shown is that of the EPA study area, not that of the modeled area. A scale should be added. W-358

Page 2.65, last par.: Other changes are that more water will be discharged by upward leakage, and in Polk County less water will be recharged by downward leakage. W-359

Page 2.66, fig. 2.11: See comments for figure 2.10 (p. 2.65). W-360

Page 2.69: Sub (b) on soils should be revised in a manner consistent with the recommendations made for page 2.40. W-361

Page 2.72: One can not be certain from reviewing the last paragraph if these statistics are based on previous Florida reclamation standards or on the best available techniques for reclaiming mined land. W-362

If the losses identified in the last paragraph of page 2.72 result from the lakes or other wetlands that would be created, then it would be appropriate to discuss the benefit of these new areas, if there are benefits. If these losses are based on existing reclamation requirements or current reclamation trends, then it should be noted that with appropriate regulations the local or State governments could prevent many of those losses if they deemed it appropriate.

Page 2.74, par. 3: Another change is decreasing upward leakage in coastal areas. Also, upconing, as predicted on page 2.64 (par. 3), is not mentioned here. W-363

Page 2.74, par. 4: It would be helpful to include the potentiometric change map from Wilson's report. In the first line, "1-foot" should be changed to "2-foot". W-364

Page 2.75, par. 1, last line: Change "1974" to "1975." W-365

Page 2.75, par. 2: In describing the 1-foot decline, it should be noted that simulation of heads is less acurate near boundary nodes than elsewhere in the modeled area (Wilson, 1977, p. 25). Thus, comparison of the position of the 1-foot contour line in 1985 and 2000 is meaningless, and the last sentence should be deleted. W-366

Page 2.75, par. 4: The word "western" should be changed to "eastern." W-367

Page 2.78: While mining necessitates the total clearing of an area and the cutting of all timber, losses should be measured in terms of reduced annual harvests. Is timber commercially harvested in these seven counties? If so, a table on existing and projected harvests would be helpful. It should also contain estimates of how this would be effected by mining and reclamation decisions. While it is accurate to state that mining involves the "destruction of a resource", it is also appropriate to review efforts that have been made to reforested and revegetated mined land areas. The principal reasons why more areas have not been reforested is that (1) reforestation is a long-term land use choice, (2) these counties are not a major timber producing area, and (3) most reclamation decisions are made by the surface owners. W-368

No mention is made of uranium loss or recovery here, yet earlier (p. 2.62), it was indicated to be of more significance than timber. W-369

Page 2.80 and 2.82, figs. 2.12 and 2.13: The two figures are reversed. Also, on both figures the boundary shown is that of the EPA study area, and not that of the modeled area; "Scale 1,500,000" is incorrect. W-370

Page 2.80, last par.: The question whether "a decrease in groundwater flow toward the Gulf of Mexico" will affect freshwater resources in Manatee and Sarasota Counties should be addressed. W-371

Page 2.81, par. 2 and 3: The increase for potential upconing through wells and theorectical landward movement of the freshwater/saltwater interface are mentioned. The likelihood, magnitude, and seriousness of these problems should be evaluated. Also, upconing by upward leakage in inland areas should be discussed. W-372

Page 2.81, last par.: It is not clear whether the changes given for September 2000 are being compared to the September 1985 or September 1975 maps. The description of the 30-foot contour line does not correspond to that shown on the map in Wilson's report. It would be helpful to include the change map for 1975 to 2000 from that report. W-373

Page 2.82: The significance of small decline relative to the thickness of the freshwater zone should be explained. In the western part of the study area the freshwater zone is not 1,500 feet thick. As above, the "increased potential for saltwater encroachment" should be evaluated. W-374

Page 2.83, par. 2: The effects on water quality in the Floridan aquifer are not mentioned under secondary effects for Scenario 2.15 (p. 2.67, par. 1) and should also be covered here for Scenario 2.11. W-375

Page 2.84, table 2.16: Wage losses were based on 1975 wages adjusted for 1967 purchasing power. To show the inaccurate picture that is represented by this method, the average per annum wage per worker was quoted as $7,742; while according to the Lakeland-Winter Haven Standard Metropolitan Statistical Area (SMSA) report of employment, submitted to the U.S. Department of Labor, the annual income for phosphate industry workers was over $11,000 per annum in 1975. It is expected that current earnings are again substantially above 1975. Wage loss was underestimated by at least 50 percent. This type of analysis gives a completely inaccurate picture of the alternative scenarios. W-376

Page 2.91: The phosphate (and uranium) resources preserved by restricting mining activities from water of the U.S. and wetlands will be of value only if in units of size and character that may eventually be mined. W-377

Page 3.4 and 3.5, Water Quantity and Quality: Impacts on quantity and quality of water in Floridan aquifer should be mentioned. W-378

Page 6.1: The mineral commitment should compare resource mined with the total resource. Recovery of the balance should be addressed. W-379

Page 7.5: Delete reference "Wilson, W. E., 1975." Change reference from "Wilson, W. R., 1977" to "Wilson, W. E., 1977." W-380
Add reference: Wilson, W. E., 1977b, Simulated changes in ground-water levels resulting from proposed phosphate mining, west central Florida--preliminary results: U.S. Geological Survey Open-File Report 77-882, 46p. W-381

RECEIVED
EPA/REGION IV
MAY 31 11 56 AM '78
ENFORCEMENT
DIVISION

5850 Gulf of Mexico Dr.
Longboat Key, Florida 33548
May 24, 1978

Mr. Paul Traina
Director Enforcement Division
United States Environmental Protection Agency
1421 Peachtree St. N.E.
Atlanta, Ga. 30309

Dear Mr. Traina,

For personal reasons I was unable to attend the hearing held at Manatee Junior College on Monday of this week, which hearing regarded the future development of phosphate mining and industry. I have followed much about phosphate and am particularly interested in the future regarding how its development is done or maybe is not done due to the fact that I was born and reared in Polk County, Florida, where the scars of phosphate mining are really making many problems for now and years to come. These problems are regarding radiation, water draw-down and resulting sinkholes and disappearing artesian springs (where I used to swim), air pollution and water pollution.

I am enclosing a letter that I wrote to Mr. Richard J. Guimond of the EPA in Washington and would call your attention to pages 15 through 22 in his paper of the study entitled THE RADIOLOGICAL ASPECTS OF FERTILIZER UTILIZATION. As you surely must agree the questions this study raises certainly should be answered before much is done in new permits for mining and using phosphate. I will also enclose a copy of his reply to me. It seems to me that controlled studies in fast growing lab animals eating controlled diets of food raised both with and without phosphate fertilizers could be performed and the answers found within a reasonable amount of time. Also, I have read of at least two companies now either actively extracting uranium from the phosphate or planning to do this. They are making money on it of course. The end fertilizer should be safer for food growing, would it not? Why not look into this part of the study more thoroughly and make further requirements. W-391

In Manatee County, where I now live, we are faced with the spectre of Beker Phosphate Co. being allowed to mine in an area around the watershed of the Manatee River, which is THE source of our drinking water without being required to construct their slimeponds in as safe a way as possible. How do you like that? Will EPA come to our rescue in time of no drinking water or unnecessary health problems? W-392

It would be fitting if those in a position to make decisions like EPA officials face were required to live within the affected area covered by their decisions and not just pop in and out again. Please think of your decisions as though this were true and it might make a difference. Thank you. W-393

Marty Ervin
Sincerely, Marty Ervin (Mrs. E.K. Ervin)

Copy: Honorable Douglas M. Costle, Administrator
US. E.P.A.
401 M. St. S.W.. Washington, D.C. 3-252

Copy

3850 Gulf of Mexico Dr.
Longboat Key, Florida 33548
August 10, 1977

Mr. Richard J. Guimond
Office of Radiation Programs
U.S. Environmental Protection Agency
Washington, D.C 20460

Dear Mr. Guimond,

I have read your paper, "The Radiological Aspects of Fertilizer Utilization", and whereas most of it is over my head, the reason I looked it up in the first place was my own curiosity regarding the absorption of radioactivity by foods we eat. I have asked physisists, physicians and elected officials if anybody knew what the public may be taking in through foods fertilized with phosphates and nobody could give me an answer.

I recalled reading in the newspaper about certain grapefruit produced in Polk County, Florida, that contained radiation. It was not explained whether the radiation was due to fertilizers or perhaps that the roots had reached down to natural radiation in either the soil or water.

I have wondered whether the higher incidents of cancer has followed the use of commercial fertilizer that got its large start in the 1840's and then with the superphosphates later on giving such possibilities a larger boost.

Is there a society in this world that has not used commercial fertilizers and from which studies regarding percentage of cancer development could be compared? Perhaps we should not even be using phosphate fertilizers unless the radiation can be removed before it is made into fertilizer.

Maybe my thoughts are way off base but I just thought I would send them to you in case they are valid.

Sincerely,

Marty Ervin (Mrs. E.K. Ervin)

3-253

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Copy

AUG 18 1977

Mrs. E. K. Ervin
5850 Gulf of Mexico Drive
Longboat Key, Florida 33548

Dear Mrs. Ervin:

I am writing in response to your letter of August 10, 1977, discussing radioactivity in foods that we eat. Studies by the Environmental Protection Agency and other investigators have shown that phosphate based fertilizers contain concentrations of radioactive materials which are higher than normally found in soil. Our studies show that different types of fertilizers contain varying concentrations of these radioactive materials and, therefore, would be expected to have differing potential for enhancing the radioactivity in the soil. As you may know, radioactivity is ubiquitous throughout the world. As a consequence, there are background levels to which we exposed that cannot be reasonably avoided. However, we believe that it is prudent to minimize human exposure to radiation as much as possible. As a consequence, we try to provide technical controls to undiscriminate release of radioactivity to the environment to the extent practicable. At present we do not know if the radioactivity present in the fertilizers is having any significant impact on the uptake of radioactivity in foods. In general, the uptake in most cases is probably small, but we are attempting to learn more about the situation and will be publishing the findings as our work progresses.

Florida is unique in that 80% of phosphate mining in the United States originates in Florida. Consequently, there is a considerable amount of radioactive material naturally present in the subsoil throughout central and northern Florida. Prior to mining, this generally does not interact with the biosphere; however, redistribution of this radioactive material in mine products and wastes can cause increased interaction with the biosphere and man.

You referred in your letter to reading a newspaper account which noted that certain citrus produced in Polk County contained radiation. This citrus was grown on reclaimed land or land containing considerable phosphorous material. Because of the radioactivity associated with the phosphate material in the ground we have been observing some radioactivity uptake in certain crops. This is probably more significant for crops grown on lands which contain considerable concentrations of the phosphate ore or related materials, than for land where fertilizers have been added, because the phosphate land would contain higher total concentrations and quantities of radionuclides than you would normally find once a fertilizer was distributed throughout the plowed layer of farm land.

Unfortunately, it is very difficult to estimate whether increased fertilizer use since the mid-1800's has had any impact on national cancer rates. I believe that in determining whether we should or should not use phosphate fertilizers we have to look at the benefits obtained by the utilization of the fertilizers. Clearly, these fertilizers substantially increase crop yields and thus enable a considerable amount of food to be grown on the land. In times of food scarcity, the fertilizers are quite beneficial in feeding the world's population. However, if it is possible to practically remove radioactive materials from fertilizers, we must certainly evaluate the reduction in health risk that could accompany the removal. Where removal is determined to be practical it should be strongly considered.

Thank you for your interest in the protection of public health from radioactive materials, and particularly with respect to the work being done by the Environmental Protection Agency. For your information, I am enclosing several publications we have recently prepared regarding the phosphate industry and its potential impact on public health. If you have any questions regarding these publications, please do not hesitate to write me.

Sincerely yours,

Richard J. Guimond

Richard J. Guimond
Federal Guidance Branch
Criteria & Standards Division (AW-460)

cc: Dick Payne, Region IV
Ray Clark
Charles Porter, EERF

USEPA, Region IV
Phosphate Unit
345 Courtland Street
Atlanta, GA 30308

21 June 1978

Gentlemen:

A close study of the pertinent working papers prepared for the Central Florida Phosphate Industry Areawide Impact Assessment Program leaves me with the conviction that a serious omission exists concerning phosphate industry induced radiation impacts on the Peace River and Charlotte Harbor.

The only report of the concentration of radioactive materials in the surface waters of the Peace and Myakka Rivers and their tributaries or of Charlotte Harbor appears on page 4.24 of Section 4, Volume VI and is for a point well up the Peace at Saddle Creek. W-394 It is of course well known that both the Peace River and Charlotte Harbor are "high phosphate waters" due not only to mining activities, but also to the natural pick-up due to the normal erosive forces as the river makes its way through phosphate rich soils. It is also well known that radioactive materials are common companions of the phosphate. The question in the minds of many has been whether the river and harbor had levels of materials which could be considered to be potentially harmful. These papers do not address that question even though many of us had thought that that was part of the plan. The question is particularly pertinent in light of the fact that steps are underway to utilize the waters of the Peace as a source for Port Charlotte. There must be figures available somewhere to support the continuing planning for such use. An evaluation of the surface waters from the public safety point of viewe certainly seems warranted.

Of particular significance is the fact that roughly half of the population of Charlotte County are over 60 years of age. Such a group of people lived through the period when the medical profession and industry didn't recognize the potential future effects of exposures to X-rays and other forms of radiation. Many individuals may have a heavy burden from the past and thus form a group which should not be exposed to even rather low levels of radiation.

The preceding paragraphs are limited to possible hazards during what might be called normal weather periods when the bottom W-395 sediments of the river and harbor remain relatively undisturbed. The massive slime spill of 1971 significantly altered the bottom of the Peace and portions of the bottom of Charlotte Harbor. Your papers report that "The flow of the river was increased by a factor of 6, with a phosphorus concentration of more than 7,000 milligrams per liter.", and "Sediments were deposited more than 6 feet deep in parts of the river channel, and a 3-inch layer was left in Charlotte Harbor 70 miles downstream." I found no mention of measurements or estimates of the radiation levels which certainly must have been increased above any "normal" level. If there are no measurements, then I believe that a calculation should be made using the same rationale as that in the hypothetical case of a spill of approximately one-tenth the size. (See page 4.30 of Section 4, Vol. VI) I recognize that the results of such a calculation could have strong emotional and political impact, but I believe that it would be less than honest to fail to do so.

The slime deposits on the river and harbor bottoms have been subjected to actions of the river and harbor water for 6½ years so it can be presumed that changes have occurred. No data are given concerning those deposits so one must proceed by using assumptions. I believe that it would be reasonable to assume that a significant percent of those deposits remain and that little of the radioactivity has been lost thru solution but remains in the particulate form. If that be true, the river and harbor now represent a reservoir for an unknown but measureable amount of radioactivity in fine particle form which can become suspended along with the other bottom silts whenever vigorous currents occur. Once in suspension, these particles are subject to the concentrating effects of surface tension and bubble formation due to wave action, much like the industrial ore beneficiation process using froth flotation. Once in the bubble film, the fine particles can become airborne and produce aerosols of particles in sizes which can penetrate to the alveoli of the human lung and be retained there. A recent paper (E. R. Baylor, *et al.*, Science, 198, 575, 1977) and referenced papers describe a somewhat similar process with viruses and surf action.

W-396

The studies of the quality of the surface waters of the Southwest area of Florida conducted under the 208 Water Quality Management Program have been completed and did not include measurements of radioactivity because of the assumption that data would become available from your program. The absence of data thus leaves a potentially important gap in that program.

The Environmental Impact Assessment Program will remain incomplete and unsatisfactory until the actual past impacts and the potential future impacts of the radioactive materials loosed by the activities of the mining industry into the Peace River and Charlotte Harbor are evaluated in a thorough and impartial manner.

Yours very truly,

James R. E. Smith
101 Danforth Drive
Charlotte Harbor, FL 33950

cc: 208 Project Director, Ft. Myers, FL

Planning + Development Dept.
212 - 6th Ave. E
Bradenton, FL. 33507
April 30, 1978 McNeill

Mr. John C. White
Regional Administrator U.S. EPA Region IV
345 Courtland Street N.E.
Atlanta, Ga. 30308

Subject: Draft Areawide Environmental Impact Statement
Central Florida Phosphate Industry dated March 1978.

Dear Mr. White:

Before commenting on the subject Draft EIS, I refer you to a letter dated May 18, 1976 to Mr. Gene McNeill (Subject: Draft Plan of Study -- Areawide Phosphate EIS) from Mr. O. E. Randall, Jr. Pollution Control Director Manatee County; and to my letter dated December 29, 1976 to Mr. Gene McNeill, the subject of which is the Central Florida Phosphate Environmental Impact Study. You will note that in both letters we have stressed the necessity for obtaining information on radiation. For your convenience copies of these letters are enclosed.

Referring to Section 1E of the subject DEIS entitled Proposed Action, I do not consider the item beginning "Address proposed regulations regarding radiation levels" to be in any way an adequate response to our question regarding radiation posed in the attached letters.

It is stated that the DRI and/or Site-specific EIS should develop a reclamation plan that considers radiation of spoil material and reduces as much as possible the amount of radio nuclide-bearing material left within the 3 - 4 inches of the surface. What regulations will be used to evaluate such data when submitted? W-397 Also, use of connector wells is mentioned and it is stated that monitoring by both industry and regulatory agencies should be carried out to insure that water injected into the deep aquifer will not be radiologically contaminated. Again the question is asked, what regulations will be used as criteria?

You will appreciate that mining in Manatee County has not yet begun and that the granting of local permits to carry out mining operations is pending. We are so to speak "under the gun" and we hope that the final EIS will furnish much needed answers.

As to the other material presented in the subject Draft, I consider it to be helpful in the implementation of our existing mining regulations.

Mr. John C. White
Regional Administrator U.S. EPA Region IV

April 30, 1978

With reference to your memo dated April 7, 1978 which accompanied the Draft EIS, I noted your statement to the effect that the working papers are currently being revised and rewritten. May I ask that copies of these revised working papers be sent to Mr. Charles Carrington, Director Planning and Development Department (Manatee County) 212 Sixth Avenue East, Bradanton, Fla. 33508. W-398

I also noted the statement to the effect that the final EIS will not reproduce material contained in the Draft and that decisions concerning new source NPDES permits will be reflected in the final EIS. It would be very helpful at the County level if the role of the federal government in controlling phosphate mining in Florida could be specifically spelled out by listing permits required and the federal regulations under which they are required. W-399

Yours very truly,

Gordon W Bartle

Gordon W. Bartle
Member Advisory Committee
Representing Manatee County

encls.

DEPARTMENT OF **Reubin O'D Askew, Governor**
Health & Rehabilitative Services
DISTRICT SIX MANATEE COUNTY HEALTH DEPT
202 SIXTH AVENUE, EAST BRADENTON, FLORIDA 33505

May 18, 1976

Mr. Gene McNeill
U.S. Environmental Protection Agency
1421 Peachtree Street, N.E.
Atlanta, Georgia 30309

Subject: Draft Plan of Study - Areawide Phosphate EIS

Dear Gene:

This letter is primarily intended to convey our thoughts engendered by our perusal of the Subject Draft Plan of Study.

However, we feel that the validity of our comments is predicated on a clear understanding on our part of the material presented in the subject draft and preamble thereto and concurrence on your part that our understanding is correct. Therefore, to this end we present the following synopsis:

PREAMBLE

1. The U.S.E.P.A. will prepare an EIS specifically on the current and projected development of the phosphate industry in Central Florida.

2. An 18 month study to be conducted by the EPA's Atlanta Regional office will provide the data necessary for the preparation of said EIS and will also provide an economic and social analysis of the impact of the industry on the region, i.e. Central Florida.

3. The EIS will be in compliance with the requirements set forth in the National Environmental Policy Act, the Federal Water Pollution Control Act and will also analyze environmental impacts resulting from all proposed Federal Permits or actions of all phosphate mining or processing activities in the Region.

4. The study will be guided by a Steering Committee consisting of:

   (a) ACEQ Chairman.
   (b) Appropriate Department of Interior Representatives.
   (c) Appropriate Department of Agriculture Representatives.
   (d) EPA Representatives.
   (e) Corps of Engineers Representatives.

   Advisors to the steering committee will be appointed by:

4. (Continued)
   (a) The State.
   (b) Local and County governments, especially Manatee County.
   (c) Appropriate environmental groups or organizations.
   (d) The phosphate industry.

5. Preparation of the EIS will be administered by the EPA Regional Director.

DRAFT PLAN OF STUDY - AREAWIDE PHOSPHATE EIS

1. Prepare a base line EIS. The material contained therein will be derived mainly from available data in various fields relevant to the mining and processing of phosphate e.g. hydrology, biology, geology including soil types and characteristics, socio-economy and topography. This base line EIS will be used by the EPA in the preparation of EIS's applicable to specific cases involving the issuance of Federal permits.

2. The subject Plan of Study will be used to solicit bids from qualified prime contractors possessing the capability of conducting and managing the entire study. Contractors that have been employed by the phosphate industry or suppliers of the industry shall not be retained.

3. The EPA will assign a full-time project officer with a professional and clerical staff under his direction to assist the Contractor and review the results of the contractor's work..

4. Duration of the Contract will not exceed 12 months within which time interval a final report in the format outlined in Federal Register Title 40 - Protection of Environment - Chapter 1-EPA Part 6 Preparation of Environmental Impact Statements will be prepared (paranthetically it is our understanding that the National Pollution Discharge Elimination System (NPDES) will have a bearing on the EIS content). Supplementing this report will be bound summaries of each scenario encompassed in the final report.

5. Elements #1 through and including #8 of the subject "Draft Plan of Study" are outlines of the contents of the final report to be prepared by the prime contractor.

Assuming that the above synopsis indicates an accurate understanding on our part of that which is presented in the subject "Draft Plan of Study" we now offer our comments which we hope will clearly express our beliefs regarding that which our constituents will require if they are to accept the activities of the phosphate industry in our County with a reasonable degree of equanimity.

As you may know we presently have as part of our Zoning Ordinance a section covering phosphate mining which is considered to be one of the best in the State. Land reclamation, protection of the natural ecosystem, protection against reduction of the quantity and quality of surface water sources and protection of the water table aquifer are all covered by procedural requirements. Therefore, the information to be contained in Elements #1 through #8 will be of significant value to us even though in one very important area, i.e. the hydrological characteristics of the Florida aquifer in their quantitative aspects are more directly related to SWFWMD since it controls the consumptive use of water drawn therefrom.

However, several questions have been raised; some at the 5 day public hearing on the Phillips Petroleum proposal to mine phosphate in our County and some by news releases eminating from the EPA and the State Department of Health. These questions have created public concern regarding the possible degradation effects of phosphate mining and we believe strongly that they must be addressed by the Steering Committee and the prime contractor. We pose the questions in an order reflecting the degree of public concern and on each question offer our comments.

Question #1 - Will radioactive radiation and radon presence on reclaimed land increase to a level above the existing natural background radiation and emission levels to a point where it constitutes a health hazard and will slime ponds created during the operations be a source of dangerous radiation and emissions? As you may have noted our Zoning Ordinance as it pertains to phosphate mining is predominantly land use oriented and we deem it essential first to determine if a radiation hazard could be created and if so to obtain from a qualified source a methodology to prevent it.

Question #2 - Will consumptive use of water by the phosphate industry particularly from the Floridan aquifer reach such proportions that it would (a) restrict farm land irrigation and beef cattle and dairy operations (b) adversely affect the public drinking water supply as to the quantity and quality (c) contribute to possible salt water intrusion or upwelling. We recognize, of course, that water use and quality is a matter of concern to the appropriate state regulatory agencies but it is also the concern of our County.

Question #3 - Is it practicable to use surface water in the beneficiation process employed to recover phosphate fines? We have been told that the use of surface water in this process involves problems in obtaining water of a suitable chemical composition but limiting parameters have not been identified. We believe, however, that in every proposed operation surface water use should be thoroughly investigated.

Question #4 - In the interest of saving water is it possible and practicable to use dry beneficiation methods in recovering phosphate ore of the type found in Central Florida, i.e. in the Bone Valley formations?

Question #5 - Is it possible to improve the reclamation process delineated in our current Zoning Ordinance? A copy of the section pertaining to phosphate mining is attached for your perusal. We recognize the possibility that a methodology for preventing radiation and radon emission hazards will have to be included. However, there are other areas of concern such as the preservation of wetlands which contribute to the maintenance of the natural ecosystem and to the maintenance of stream flow and lake levels which should be examined. Concerning the term "Wetlands" it is essential, we believe, that it be concisely defined.

Question #6 - Should the number of simultaneous mining operations in a region be restricted by area topography and hydro-geological characteristics? This question has been raised in our County by the expressed desire of a number of our citizens to the effect that if phosphate mining is permitted it should proceed on a "one-firm-at-a-time basis". Thus reducing the strain on our water supply and minimizing the disruption of the land area while the mining operation is proceeding.

Credit for the foregoing should be given to Mr. Gordon Bartle, a member of the Manatee County Planning Commission.

Very truly yours,

O. E. Randle, Jr.
Pollution Control Director

OERjr:dk

Attachments:
- Zoning Ordinance
- Inventory of W.R. Grace material
- Inventory of Phillips Petroleum material
- Inventory of Beker Industries material
- Manatee County Pollution Control material

CF Industries, Inc.

SALEM LAKE DRIVE
LONG GROVE, ILLINOIS 60047
312/438-9500

June 21, 1978

Mr. John E. Hagan III
Chief, EIS Branch
Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

SUBJECT: Draft Areawide Environmental Impact Statement - Central Florida Phosphate Industry

Dear Mr. Hagan:

CF Industries (CF) appreciates this opportunity to provide comment on the Draft Areawide Environmental Impact Statement (DEIS) on the central Florida phosphate industry. CF Industries is an inter-regional cooperative, consisting of nineteen (19) farmer owned regional farm supply cooperatives in the United States and Canada. CF Industries' Florida operations are composed of four separate facilities: two phosphate fertilizer manufacturing complexes -- CF Chemicals, Inc., (Bartow) and Central Phosphate, Inc. (Plant City); a phosphate mining complex -- CF Mining Corporation (Hardee County), and a distribution facility -- Tampa Phosphate Terminal. Although CF Industries is not a member of the Florida Phosphate Council, CF is a major manufacturer of phosphate fertilizers.

Since CF does have a substantial investment in the central Florida phosphate region, we also have a profound interest in the DEIS. One of our fundamental concerns is how the recommendations of the final EIS (FEIS) may be used by regulatory agencies in the future. It is our opinion that many recommendations which are made on an industry-wide basis in the DEIS would best be addressed in a site-specific examination of particular regulatory problems. The final EIS should give recognition to this fact.

W-400

Additionally, there are six major areas about which CF would like to comment. They are as follows:

JUN 23 1978

1. Chemical Processing of Dry Rock
The DEIS proposes (Page 1.70) that rock-drying processing be eliminated at new source mines. Certain exceptions are noted for existing, DER-permitted dryers. However, there is good reason to expand the list of exceptions to include a dryer at CF Mining's Hardee mine site. Should other producers decline to supply dry rock to the Bartow Complex at a competitive price, CF Mining would be required to provide it. There should be no prohibition in the FEIS which will prevent CF Mining from having a dryer at its Hardee site because such a prohibition would needlessly restrict competition.

W-401

In addition to the required uses for dry rock as delineated on Page 1.70, certain fertilizer plants -- among them, CF's Bartow Complex -- consume only dry rock. To change to wet rock would be an extremely difficult engineering assignment. Whereas the advantages of wet rock grinding are prominently mentioned on Page 2.21, we recommend that the disadvantages be as prominently discussed in that same section. They are as follows:

a. For a chemical plant converting from dry rock to wet rock, there will be a substantial capital expense in the range of $10 million.

b. The switch from dry rock to wet rock would have substantial negative environmental, as well as economic impacts on the management of pond waters. For a chemical plant using pond water for dilution of sulfuric acid in the phosphoric acid manufacturing process, a detrimental pond (process) water balance would result. The change could easily turn a pond water complete recirculation situation (on a yearly basis) into one requiring treatment and discharge of treated process waters.

c. At an existing location, there may not be space available for the required wet rock storage. It is estimated that changing from dry rock to wet rock would increase land requirements from 0.4 acres to 7.7 acres, or more than 19 times the dry rock land requirements.

2. Elimination of Slime Ponds

Throughtout the DEIS, the phrase "elimination of slime ponds" is repeatedly used (see pages 1.70, 2.85, 2.86, 2.87, 2.88, 3.2, 3.6, and 3.8). CF requests that at a minimum the use of this phrase be changed to make clear that the recommendation proposes to substitute below grade storage of slimes for "aboveground slime -- disposal areas", not the total "elimination of slime ponds." Even the new technologies that offer some promise still require slime disposal areas, although it is possible that the bulk of the disposal could be below natural grade. It is important to understand that requiring below ground level slime disposal will increase the total acreage of land that has limited use for other than light agriculture. Water usage is primarily a function of the final per cent solids of the disposed clay fraction, and it will always be a desirable goal to seek methods that accelerate the release of water from this clay. W-402

3. Effluent Limitation - Phosphate Mining Subcategory

As a part of the proposed action, new source phosphate mining (Page 1.70) -- the DEIS recommends that new sources "Meet Florida's effluent limitations for any discharges." CF Industries has no data to indicate the achievability or non-achievability of the state's limitations. CF did follow DER's rule-making effort in the fall of 1976, during which time the state adopted the phosphate mining effluent limitations. Throughout this DER rule-making process, both the data base used and the interpretation of that data for the development of the regulations were suspect and inadequate. W-403

A more prudent recommendation of the DEIS would be to review EPA's phosphate mining subcategory effluent limitations through the traditional development document process to determine if the present limitations are technically sound or if technological advances allow a more stringent effluent limitation. At this time, both rules are based on identical technology, the settling pond, nevertheless they impose different effluent limitations. This technological anomaly should be resolved by the FEIS or by appropriate rule-making proceedings.

4. Wetlands

The DEIS discusses protection and restoration of wetlands at several points through the document. CF Industries recognizes that there are environmental concerns relating to wetlands. However, we are equally concerned that any blanket prohibition of phosphate mining in wetlands would constitute arbitrary and capricious regulation. In CF Industries' case, a resource was purchased with the right to mine phosphate rock. Prohibition of that action deprives our farmer-owners of utilizing that resource, and unless justified by a detailed site- specific study, could constitute a taking of private property requiring compensation under recently enacted Florida law. See Chapter 78-85 - Laws of Florida. W-404

Wetlands considerations should be on a case-by-case basis just as other environmentally related considerations; e.g., ambient air, water quality, etc., are made. Where restoration plans are proposed that satisfy realistic environmental concerns, mining should not be prohibited but should be allowed with adequate conditions. W-405

The discussion on Page 3.7 is not germane to the overall wetlands considerations. To imply that "prohibiting development in wetlands" will "not materially affect production tonnages" conceals the fact that wetlands phosphate reserves that are W-406 left unmined are no longer economically recoverable. The net result is a shorter lifetime of the deposit in question.

Finally, the third paragraph on Page 5.1 of the DEIS is unclear. This paragraph discusses "Holding wetlands from industrial development by the phosphate industry . . . ." The wording in that discussion is confusing and incomplete. It can be construed to imply that wetlands whose development was restricted during phosphate mining may be developed at a later date for other purposes such as agriculture. The sentence does not explain why development of wetlands for agricultural or other uses is to be preferred over development of that same wetlands by the phosphate industry. W-407

5. Lining of Gypsum Ponds
As CF Industries understands this recommendation concerning gypsum pond lining (Page 1.72 of the DEIS) impervious lining would not be required if on a site specific basis it can be demonstrated that such lining would be unnecessary. Such a demonstration can be made by developing a correlation between the geology of an existing site and the geology of a new site. W-408

The DEIS acknowledges that "insufficient data exist to quantify seepage" from existing gypsum ponds (Page 2.87). Therefore, before concluding that an impervious liner is mandatory, existing ponds should be studied to determine the extent, if any, of the seepage. Therefore, any claims that seepage has contaminated any aquifer system is purely speculative and does not belong in a technical, scientific document such as the FEIS.

6. Recirculate Noncontaminated Water
One proposed action called for by the DEIS is the "recirculation of noncontaminated water." Most chemical plants presently recirculate these waters to the greatest extent feasible. However, it W-409

appears that the DEIS is proposing something more than the present practice.

The DEIS is proposing that waters presently discharged under EPA's classification of "contaminated non-process wastewaters" (as distinguished from process wastewaters) be contained as are the process (pond) waters. It must be pointed out that even the newest phosphate fertilizer plant in central Florida only accomplishes that by virtue of disposing of its wastewaters to a mining operation. While this might be a design consideration for a new chemical plant, the extension of this requirement to existing chemical plants (Page 1.74, 2.a) has not been demonstrated to be practical from a cost/benefit determination and indeed CF submits that the cost would make such a requirement for existing chemical plants uneconomical.

Another concern is whether the term "contaminated non-process wastewater" (a particular EPA classification) is correctly understood as used in the DEIS. "Contaiminated non-process wastewaters" include the following waste streams: cooling tower blowdown, boiler blowdown, regeneration waters, and waters contaminated by spills and leaks. It can be readily seen that these waters are not entirely capable of being recirculated and reused. Therefore, to imply as the DEIS does, that "noncontaminated water be recirculated" does not address the entire issue of reuse of contaminated non-process waters.

It should be kept in mind that before contaminated non-process wastewaters can be reused within a plant a consumptive use must be found that is suitable for this quality water. Since each stream has unique characteristics (impurities), a detailed study must be undertaken to determine their reuse potential. Until such time, the contaminated non-process wastewaters must be discharged as permitted by present EPA regulations.

SUMMARY

The DEIS process has attempted to thoroughly examine the central Florida phosphate industry. While CF Industries does not concur with all of the recommendations, we share EPA's concern that more information is needed to properly assess the present condition of the area's environment, the relationship of that environment to the phosphate industry, and the need for further regulations in selected areas. When the final EIS is prepared we are very apprenhensive that the recommendations contained therein may be misconstrued by regulatory agencies as a mandate from EPA to adopt rules and regulations implementing these recommendations. For this reason we hope that the final EIS will specifically state that its contents include some recommendations that do not represent proven technology, and therefore should not be slavishly followed by rule-making bodies as they are applied, particularly to existing facilities. W-410

Sincerely,

T.H. Traylor

T. H. Traylor
Vice President - Operations

THT/wpc:df
cc: Malcolm S. Scott

GARDINIER INC.
U.S. Phosphoric Products
Post Office Box 3269 • Tampa, Florida 33601 • Telephone: 813 - 677 9111 • TWX 810 - 876 0648

June 21, 1978

Mr. John E. Hagan, III
Chief, EIS Branch
U.S. EPA, Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Dear Mr. Hagan:

Gardinier, Inc. appreciates this opportunity to present its comments on "Proposed Action" of the "Draft Areawide E.I.S. Central Florida Phosphate Industry":

a. Mining and Beneficiation Requirements

Eliminate Rock Drying (Page 1.70):

While we agree that any mine which supplies rock to a new phosphoric acid plant should not dry that portion of its production unless the energy required for the transportation of the moisture exceeds that utilized in drying, we strongly disagree with the balance of this proposed action. Need will continue to exist to supply existing phosphoric acid plants with rock. The feasibility of converting existing phosphoric acid plants to wet rock feed would have to be considered on a plant-to-plant basis. W-411

Drying of that portion of the mined rock which requires drying, should not necessarily be conducted at the point of consumption. This clearly increases energy consumption in transporting the moisture. Additionally, depending on the location of the mine and the location of the point of consumption, the least environmental impact could occur if drying were conducted at the mine.

Effluent Limitations (Page 1.70):

If the statement is to be taken at its face value, that Florida Law shall apply, there are, of course, no objections. If, however, it indicates, as it would appear from the working papers, that the limitations present in Rule 17-3.04(2)(a)2a and 17-3.04(2)(a)2a(XXV) apply, there is strong objection. These rules are currently under litigation. These values were submitted to the Guidelines Division of EPA when the mining effluent guidelines were under review and were rejected as unsupported. The existing EPA Standards of Performance are sufficient to protect the environment. W-412

Eliminate Above-Ground Slime Disposal Areas (Page 1.70):

Under specific conditions of matrix composition, mixing of sand tailings with phosphatic clays appears to be feasible, however, it is far from a fully developed technology. Another consideration which has been totally overlooked is that slime ponds represent a potentially valuable national resource. While at this time, no technology exists to recover the phosphate values they contain, the possibilities are very high that such technology will develop in the forseeable future. Mining wastes of previous decades are now being reprocessed for recovery of their phosphate values. The present method of disposal permits ready recovery when new technology develops. W-413

Wetlands (Page 1.71):

Unlike other activities of man which can disturb wetlands, mining is unable to select alternate sites. Minerals must be recovered where they exist. To mine around an area is a waste of natural resources. Category I Wetlands should be strictly limited to truly outstanding wetlands such as the Everglades. W-414.

b. Chemical Processing Requirements

Provide for Recovery of Fluorine:

It has not been demonstrated that recovery of fluorine lowers the equilibrium fluorine concentration in recycled gypsum pond water. As it has not been demonstrated that this action has an environmental effect, it should not be required. W-415

c. Additional Considerations (Page 1.73):

The Guidelines Division of EPA conducted extensive testing in arriving at the concentrations achieveable thru B.A.T. No new technology has been developed since that time, hence, there can be no justification for lower limits. W-416

There is no justification for surge capacity in non-process water. Such a requirement would have an adverse environmental effect by creating unnecessary surge ponds.

Very truly yours,

GEW:rew

G. E. Wilkinson

June 14, 1978

W-417

Mr. John E. Hagan III
Chief, EIS Branch
Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Dear Mr. Hagan:

Swift Agricultural Chemicals Corporation desires to submit its comments to the draft area-wide Environmental Impact Statement (DEIS) on the central Florida phosphate industry. We request that our comments be incorporated into the hearing record. Swift Agricultural Chemicals Corporation has been in the phosphate rock mining business for many years. Approximately 10 years ago we acquired property in Manatee County for the purpose of recovering the phosphate rock therefrom. We own approximately 10,000 acres in this county. We propose to mine this property in 1982. We presently have a mine located in Polk County, Florida, at Silver City. This mine will cease operations in approximately 1982. Your agency has determined that our proposed Manatee mine is a new source and therfore an impact statement must be filed.

In the DEIS, under the heading "Proposed Action," for new sources (Section 1.70), one of the items of proposed action is to "eliminate the rock drying processing at beneficiation plants and transport wet (6-20% moisture) rock to chemical plants." Exceptions to this requirement are made for fertilizer processes requiring dry rock, and also for shipments where the energy for transporting the moisture are greater than the energy saved by eliminating drying at the beneficiation plant. We feel that this item of proposed action is objectionable on several grounds, including:

1. The proposal mixes up energy considerations with environmental considerations. The exceptions bear this out. We do not feel such considerations should control environmental impact statements.

2. In the summary sheet, the major environmental impacts are listed. Requiring new phosphate mines to transport wet rock does not alleviate any of the listed major environmental impacts.

3. We feel that if there is concern about air quality in the central Florida phosphate area, standards should be promulgated to protect the air quality. If a new phosphate mine can comply with these standards and still dry their rock, they should be permitted to do so. The federal and state environmental laws are intended to protect the environment and not control the way products are produced and marketed if this can be done in compliance with the environmental requirements.

4. New mines, of course, will be competing with old mines. To require new mines to transport wet rock at an increased cost in freight will place them at a competitive disadvantage to old mines. Many customers purchase small quantities of phosphate rock, and therefore cannot economically justify the installation of a dryer. Such competitive disadvantage should be required only when environmental necessities require the same. Requiring greater costs on new sources of pollution can only be justified where the new source will increase the pollutant load to an undesirable or unhealthful level. In Section 3.1 of the DEIS it is stated that the "proposed action will have little impact on the air quality in the study area." On page 2.68 of the report it is stated: "Air emissions created by sources other than the phosphate industry will dominate the inventory in Hillsborough, Manatee and DeSoto Counties, so that any change in air quality will be difficult to associate with the phosphate industry...Sarasota and Charlotte Counties should not be materially affected by air emissions from the phosphate industry." On this same page it is stated: "Adding new mines to replace existing capacity will tend to keep constant the phosphate industry's area-wide pollutant load in the atmosphere after 1977." As indicated by these quoted statements from the DEIS, this action is not necessary with regard to air quality. All three of the Swift mines will not be operating simultaneously for any great length of time. It is very possible that Swift will decide to move its dryer from the Silver City mine to the Manatee mine. Thereby no increase in the pollutant load by Swift would be experienced. In fact, dispersion of the phosphate mines from Polk County into an additional three counties should decrease the load.

5. A standard which allows rock drying if it does not result in greater energy cost for transportation of moisture than energy

saved by eliminating drying is impossible to police. As indicated above, we feel there are sufficient regulations to protect air quality. Additional regulations only fuel inflation by increasing the cost of doing business.

Very truly yours,

SWIFT AGRICULTURAL CHEMICALS CORPORATION

By Edward R. Vrablik WDT
President

ht

3-275

saveourbays
ASSOCIATION, INC. / P.O. BOX 1333/SARASOTA, FLORIDA 33578

© 1972

June 14, 1978

W-418

PRESIDENT
Charles R. Covert

VICE PRESIDENT
T. Mabry Carlton, Jr.

SECRETARY
Dante Vezzoli

TREASURER
John L. Engels

DIRECTORS
Harry C. Adley
*George R. Anner
Samuel B. Applebaum
Elmer G. Berkel
*Capt. Wm. B. Bernard
George A. Bishopric, MD
Ms. Tesse Brumgardt
*T. Mabry Carlton, Jr.
Jerome Chambers
*Charles R. Covert
Mrs. Agnes Cowap
George Davis
Joseph F. DeNinno
*Fred C. Duisberg
*John L. Engels
Steven Floeche
Dr. Larry S. Freeberg
Gen. Arnold Funk
Homer Greer
Ansel E. Gridley
J. Randall Grobe
James A. Haley
Robert Hattersly
Clinton Johnson
Robert M. Johnson
Ms. Mary Kumpe
*Mrs. Wilfred A. Le Page
*Mrs. Jeanne McElmurray
*Robert Maas
*John Malpezzi
*Lori Lee Mowe
Frank Oehlschlaeger
*Christy Payne, Jr.
William E. Pensyl
Edward Petrick
Jonathan Pugh
Joseph Roach
John W. Robinson
Ms. Donald (Rita) Roehr
Tony Saprito
Thomas Savage
Larry Spalding
Ted Sperling
Ms. Anita Stuart
*Col. Dante Vezzoli

*Indicates Executive Committee

John E. Hagan 111
Chief, EIS Branch
Environmental Protection Agency
Region IV
345 Courtland St., N.E.
Atlanta, Ga. 30308

Dear Sir:

Based on the adverse environmental impacts as summarized on page ii of the Draft Areawide Environmental Impact Statement Central Florida Phosphate Industry. March 1978 by your agency, Save Our Bays Association Inc. wishes to be recorded as requesting of U.S.E.P.A. that no further permits be granted for the mining and processing of phosphate in the area covered by this study until such time as this study is completed and regulations based on its findings are imposed.

It is our sincere belief that the extension of phosphate mining and processing can only be detrimental to the best interests of the people of this area and all of our nation.

In the words of the Florida Phosphate Council " Phosphate Feeds You". If we accept this as a truth we must also accept our obligation to protect this invaluable resource and our responsibility to future generations.

We commend the U.S.E.P.A. for the work they have done on this study. We believe that more information is required before final conclusions can be reached. Especially in the areas of water quality and quantity, the effects of resultant radiation and air quality degradation on the human population. Existing sources must be defined as only those companies physically engaged in a mining or processing operation at this time. For proper protection of "Wetlands" a geographic deliniation as they presently exist is required.

JUN 19 1978

3-276

©1972

saveourbays
ASSOCIATION, INC. / P.O. BOX 1333/SARASOTA, FLORIDA 33578

PRESIDENT
Charles R. Covert

VICE PRESIDENT
T. Mabry Carlton, Jr.

SECRETARY
Dante Vezzoli

TREASURER
John L. Engels

DIRECTORS
Harry C. Adley
*George R. Anner
Samuel B. Applebaum
Elmer G. Berkel
*Capt. Wm. B. Bernard
George A. Bishopric, MD
Ms. Tesse Brumgardt
*T. Mabry Carlton, Jr.
Jerome Chambers
*Charles R. Covert
Mrs. Agnes Cowap
George Davis
Joseph F. DeNinno
*Fred C. Duisberg
*John L. Engels
Steven Floethe
Dr. Larry S. Freeberg
Gen. Arnold Funk
Homer Greer
Ansel E. Gridley
J. Randall Grobe
James A. Haley
Robert Hattersly
Clinton Johnson
Robert M. Johnson
Ms. Mary Kumpe
*Mrs. Wilfred A. Le Page
*Mrs. Jeanne McElmurray
*Robert Maas
*John Malpezzi
*Lori Lee Mowe
Frank Oehlschlaeger
*Christy Payne, Jr.
William E. Pensyl
Edward Petrick
Jonathan Pugh
Joseph Roach
John W. Robinson
Ms. Donald (Rita) Roehr
Tony Saprito
Thomas Savage
Larry Spalding
Ted Sperling
Ms. Anita Stuart
*Col. Dante Vezzoli

*Indicates Executive Committee

In addition the consequence, economically and environmentally of a rapid uncontrolled exhaustion of a finite resource vital to the needs of our nation must be sonsidered. No phosphate should be exported after the expiration of any existing contracts.

Processing of phosphate ore must be strictly regulated by the U.S.E.P.A. to protect the health and welfare of the people of the U.S.A.

With thanks for your full consideration of our comments.

Sincerely,

Charles R. Covert
Charles R. Covert
President, Save Our Bays Assoc. Inc.

Fred. C. Duisberg
Fred. C. Duisberg
Natural Resource Chairman
Save Our Bays Assoc. Inc.

The Fertilizer Institute
1015 18th Street, N.W.
Washington, D.C. 20036
(202) 466-2700 • Telex 89-2699

EDWIN M. WHEELER
President

June 21, 1978

Mr. John E. Hagan, III
Chief, EIS Branch
Environmental Protection Agency
Region IV
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Dear Mr. Hagan:

The Fertilizer Institute appreciates the opportunity to comment on the draft Areawide Environmental Impact Statement, Central Florida Phosphate Industry, published in March, 1978, by the U.S. Environmental Protection Agency, Region IV.

The Fertilizer Institute is an association for the U.S. fertilizer industry representing over 90 percent of the domestic capacity of plant nutrients used in fertilizers. With phosphates representing over one-fourth of the nutrients in fertilizer it is obvious that an adequate supply on a continuing basis is a major concern to not only Institute members, but the total agriculture community as well. Without this vital element made available at reasonable prices, efficient production of food and fiber by the American farmer will no longer be possible.

Two major points of overriding importance form the basis for our comments on the draft environmental impact statement (EIS).

First, we would stress the critical importance of providing a maximum degree of flexibility for industry operations in the final EIS. The EPA has stated in the public hearings that one areawide impact assessment will not adequately cover the individual situations, i.e., individual EIS will be required for each new mining operation. Likewise, it follows that each mining site presents unique operational problems requiring unique solutions. Denying opportunity for individual solutions by establishing a single rigid approach will not provide for the most efficient recovery of this essential element. One such example is the proposal W-419 that no new rock dryers be permitted. Whereas processing of wet rock is an emerging technology lending itself to certain of the phosphate chemicals, it is not universally applicable for all products needed to efficiently and economically serve the agricultural community.

The detailed study performed to gain background for this EIS has made clear the advances in knowledge and technology to address and minimize the impact on the environment caused by mining and processing of phosphates. We can expect this advancement to continue, as it must. But, as it does we cannot entirely rule out today's technology for use in cases where the latest developments do not help. To do so not only would serve to diminish utilization of our reserves, but additionally would penalize the nation's food output.

Secondly, in selecting requirements based on technology we urge the EPA to use as their major determinant the testimony of the mining engineers, process engineers and other specialists most qualified to cite the facts. Without a sound basis, the final recommendations in the EIS will lead to faulty judgments by those who must rely on it in making future decisions.

An example of our concern is the implication received from reading the summary statement and the captions throughout the draft document that "elimination of slime ponds" is now possible. There is nothing in the record to support this far-reaching conclusion. Granted, considerable progress has been made toward reduction in the size of slime ponds or the length of time to accomplish final reclamation, but elimination is nowhere on the horizon. It is grossly misleading to suggest "elimination" as a viable possibility. W-420

Another example concerns lining of gypsum ponds. In the absence of information to demonstrate the need for such a general requirement it is proposed by EPA that gypsum ponds be lined with an impervious material. To require such a lining, based only on speculative premise, would subject the operator to great expense with little assurance of success and without justification of the need.

W-421

In closing, it is urged that the agency give serious consideration to the testimony of the scientists and specialists most qualified to offer alternatives for phosphate ore processing in the light of individual mine operations and protection of the environment. Only with the recognition of the need for alternatives in the limitations imposed, will the EIS represent an accurate assessment of the continued use of one of Florida's precious resources so essential to the future supply of phosphate.

Sincerely,

M. Wheeler

Edwin M. Wheeler

EMW/pck

Mississippi Chemical Corporation
We Make Things Grow®
Post Office Box 388 · Yazoo City, Mississippi 39194 · Area Code (601) 746-4131 · Telex 58-5449

June 21, 1978

Mr. Gene McNeill
Environmental Protection Agency
Region IV
345 Courtland Street NE
Atlanta, Georgia 30308

Dear Mr. McNeill:

Re: Central Florida Phosphate Industry
Draft Areawide Environmental Impact Statement

Mississippi Chemical Corporation respectfully submits the attached comments on the referenced document.

If you have any questions or require any additional information, please contact me.

Very truly yours,

Carey Stark/LP

Carey Stark
Process Study Engineer

CS/fp

Enclosure

R
EPA-REGION IV
E I S BRANCH
ATLANTA, GA.

JUN 23 1978

Mississippi Chemical Corporation

Yazoo City, Mississippi

Comments On

United States Environmental Protection Agency

Draft Areawide Environmental Impact Statement

Central Florida Phosphate Industry

June 21, 1978

Bartow, Florida

Mississippi Chemical Corporation welcomes the opportunity to present comments on the draft Environmental Impact Statement for the Central Florida Phophsate Mining District. We recognize that the Environmental Protection Agency has been faced with a significant task in preparing the draft Environmental Impact Statement for such a broad area. We generally commend the agency for its efforts on this Environmental Impact Statement and support the goal of protecting the environment in the Central Florida area. We would call your attention, however, to those sections of the draft Environmental Impact Statement which, in our view, should be revised or clarified; namely the parts of the Proposed Action dealing with Rock Drying, Wetlands and Clay Disposal.

I. Rock Drying

The proposed action contains the recommendation that the rock drying process be eliminated at beneficiation plants. This action requires the use of wet rock in downstream processing facilities. The only proposed exemption to this recommendation is based on a trade-off between fuel requirements for drying versus incremental fuel requirements for transporting the rock to a processing site remote from the study area.

W-422

The following factors were apparently not considered and/or were given insufficient weight in developing that recommendation:

A. Wet rock grinding requires the input of fresh, uncontaminated water for the sole purpose of operating the grinding mill. The impact of this water input on the overall plant water balance must be considered on a site specific basis. In certain facilities and at certain locations, this action will require the release of quantities of water in direct proportion to that used for wet grinding. This requirement causes an adverse impact on water resources, will impact NPDES permit requirements for chemical processing facilities and jeopardizes the goal of total water recirculation in chemical processing facilities.

B. The trade-off on transportation to remote sites involves more factors than fuel consumption. The impact on total transportation cost should be considered. The proposed action will reduce by approximately 10% the effective use of vital transportation facilities, thereby increasing costs to the American consumer. Greater capital investment in transportation facilities will be required, impacting economic resources.

C. For those chemical processing plants located at a remote site and having specific requirements for dry rock, whether based on process technology or water balance considerations, rock drying facilities must be installed at the point of use. This action would have accomplished only the transfer of an atmospheric emissions source from the study area to a remote site, and at the expense of a net increase in overall fuel consumption.

II. Wetlands

On pages 1.71 and 1.72, the Proposed Action states that wetland can be classified and that some wetlands must not be altered, some must be restored and some have so little value that restoration is not necessary. We believe that some very important factors were not considered in this determination or were not given sufficient weight. W-423

A. Protection and preservation of wetlands overlying phosphate deposits causes an irreversible and irretrievable loss of valuable phosphate resources. This loss has a long term social and economic impact. This impact on the local economy, our country's agriculture or our balance of trade deficit has not been considered anywhere in the draft EIS. This impact must be considered and weighed against the value of the wetlands that may be temporarily disrupted.

B. The prohibition of mining in certain types of wetlands is based on the supposition, stated in the third paragraph page 3.3, that adequate restoration techniques will not be developed. The mining of any area which can be restored should be left open as an alternative for future decision-making as suitable restoration techniques are developed and proven.

C. The classification of wetlands by their associated water course needs to include additional considerations. The jurisdiction of the Corps of Engineers over wetlands is based on average annual water flow in the associated water course. This does not consider that some intermittent water courses may meet the Corps' flow requirements on an average annual basis, but due to the intermittent nature of the flow, the associated wetland would have much less value to the environment. These and other considerations should be included in the classification system for wetlands, allowing mining to go forward in these areas having less value.

III. Clay Disposal

On page 1.70, the Proposed Action indicates that sand/clay mixing techniques will be required in order to meet the goals of no above ground clay storage areas, land use for structures, and reclamation of water from clays. This specification of one method of sand and clay disposal is unnecessarily restrictive and ignores many significant factors. The most suitable technique for clay disposal de- W-424 pends on many factors such as mine pit geometry, clay content of the matrix, sand/clay ratio, physical properties of the clay, etc. These are site-specific factors that must be determined on a case-by-case basis. At present, there are at least seven different methods under study or in use. The selection of the most suitable method must be made on the basis of site-specific considerations.

There is one field application of sand/clay mixing in existence today as cited on page 2.20. First, it is too early to judge the ultimate success of that application, though the initial results may be encouraging. Secondly, such preliminary results should not become the basis of a requirement for sand/clay disposal at all sites and under all circumstances. Successful operation with this one particular ore body does not necessarily show that it would be technically and economically acceptable for other ore bodies. Reason dictates that a degree of flexibility be retained in this area of rapidly developing technology.

One must also recognize the problem of sand/clay disposal as one of volume. For any given ore body and selected disposal method, the volume of sand/clay material is fixed. The final volume of material is ultimately determined by the settling and consolidation of the waste materials. Given these basic facts, two considerations must be recognized. Any restriction on the height of the disposal area requires an expansion of the area involved in order to accommodate the volume of material. Thus, more land area is dedicated to clay disposal when all below grade disposal is required. W-425

Secondly, the depth of the clay or sand/clay system is a major determinant of ultimate consolidation density. By restricting the height of the disposal area to natural grade, a severe limitation is placed on the consolidation process which occurs after the clays are in place. We find no indication that these factors were considered in the development of the proposed action.

Thirdly, the prohibition of above ground storage areas other than the initial area will render some phosphate reserves unminable. Certain reserves will have such high percentages of clay in their matrices that insufficient mining pit volume will be generated to contain the waste material. Thus implementation of the proposed action will result in the irreprievable loss of valuable phosphate resources.

Mississippi Chemical Corporation adopts by reference the comments of the Florida Phosphate Council on the Areawide Environmental Impact Statement.

While the preceding remarks reflect some of our immediate concerns, MCC reserves the right to comment on any other aspects of the Areawide EIS during site specific EIS review.

May 31, 1978
317 Aurora Ave E.
Venice, Fla. 33595

Mr. John Hagan
U.S. EPA Region IV
345 Courtland St.
Atlanta, Ga. 30308

W-426

Dear Sir:

I am writing in Opposition to the continuous expansion of the Phosphate Mining Industry in Florida.

We moved to Venice, Fla. (Sarasota County) three years ago for a better, cleaner, environment for the better Health of our Asthmatic daughter (10 yrs. old), and we are not the only residents who moved to this area for Health Reasons.

The contamination of the waters, and the Air Polution is getting worse each year. The High Ozone alerts are becoming more frequent, and people are told to stay indoors with air-conditioning if they have respiratory problems or a Heart condition.

Where is the Concern for all of the Elderly who have retired to this State, and for the Children who Love to play in the Sunshine outdoors?? Let alone the people who are exposed to the radiation left in the ground, after the Phosphate Companies, gauge holes in the Earth, Contaminate the waters; and poison the Air; for their own profit, with no concern for the after effects, on Human life!!

We, as Citizens have been asked to conserve electric energy in our Homes, and gas for our cars. The Phosphate Industries, get a reduced rate for electric power, because they use a greater amount! There seems to be different regulations for the money hungry Industries of the United States; and the private citizen who is trying to survive!

It is not only the Air and Water Polution that the E.P.A. should be concerned about. The constant lowering of the Water table under the State of Florida should also be of grave concern!

I suggest that you take a plane ride over the areas where Phosphate Mining is being done, and you can See - that the Enviroment is NOT being protected from Destruction!

Yours Truly.
Mrs Jean M. Flavin

JUN 5 1978

3-288

Carl T.
ZIMMERMANN · Automation Consultant

3312 Village Green Drive
Sarasota, Florida 33579
Tel. 921-4946

June 1, 1978

Mr. Eugene McNeill, Project Manager
Environmental Protection Agency, Region 4
345 Courtland N.E.
Atlanta, Georgia 30308

Dear Mr. McNeill:

Unfortunately, I was absent from Sarasota at the time a public meeting was held at the Manatee Junior College, concerned with discussions of the Federal Environmental Impact Study of phosphate mining in Central Florida.

There still appears to be some confusion as to the seriousness of phosphate mining on the Floridian environment, and a lack of understanding of the problems by the people in this area. However, I am inclined to believe that your final analysis may provide specific recommendations to be implemented by either Federal, State or Local legislature to exercise some type of enforceable control over the problems.It will also be important that the people be informed about proposed corrective measures - in a language that can be understood by the people and assure their active support.

Prior to retirement in Sarasota, I was active in U.S.A. and some European Countries as an Automation Consultant, primarily concerned with the "Total Systems Engineering Analysis" of processing operations - and application of proven technological developments for higher productive efficieny and economical justification. I am now making a study of phosphate mining in Florida and its serious impact on the environment. Special emphasis is on water consumption, water re-cycling, radiation sources and their control, air and water pollutionproblems, settling ponds, re-clamation activities, recovery of radium from the overburden and phosphate rock, and latest developments concerned with de-watering of clay wastes to eliminate the need for settling ponds.

It may take another 2 weeks before I can list specific recommendations for improvements, which I should like to submit to you. There is indication that my recommendations will be in line with your own, and I am looking forward to EPA's proposals for corrective measures which can be agreed upon by legislature to assure prompt and strict enforcement.

Very truly yours,

Carl T. Zimmermann

CTZ:mjs.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
CENTER FOR DISEASE CONTROL
ATLANTA, GEORGIA 30333
TELEPHONE: (404) 633-3311

June 8, 1978

12 1978

Mr. John E. Hagan, III
Chief, EIS Branch
Environmental Protection Agency
Region IV
345 Courtland St., N.E.
Atlanta, Georgia 30308

Dear Mr. Hagan:

We have reviewed the draft areawide environmental impact statement for the Central Florida Phosphate Industry. We are responding on behalf of the Public Health Service.

One area of concern relative to the EIS centers around problems involving fluoride effluents in the environment. It is stated that fluorides will be discharged into both the atmospheric and surface waters. A great deal of precaution should be taken to avoid excessive exposure of workmen and residents in the area to high fluoride concentrations.

Previous studies by the National Institute of Occupational Safety and Health indicated that very low background radiation was generated by the phosphate operations in Florida. In view of NIOSH's study, it does not appear that radiation exposure from this industry would present a human health problem.

While there are a number of pollution oriented problems with this operation as proposed, they do not appear to present an imminent human health hazard.

Thank you for the opportunity of reviewing this document. We would appreciate receiving two copies of the final statement when it is issued.

Sincerely yours,

William H. Foege, M.D.
Assistant Surgeon General
Director

DEPARTMENT OF THE AIR FORCE
USAF OCCUPATIONAL AND ENVIRONMENTAL HEALTH LABORATORY (AFSC)
BROOKS AIR FORCE BASE, TEXAS 78235

8 JUN 1978

REPLY TO ATTN OF: EC

SUBJECT: Draft Areawide Environmental Impact Statement (DEIS) on the Central Florida Phosphate Industry (Your Ltr, 7 Apr 78)

TO: U.S. Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta GA 30308

Subject document has been reviewed by staff members of this organization. No major environmental impacts upon Air Force installations or operations were identified.

John P. Meade
JOHN P. MEADE, Colonel, USAF, BSC
Chief, Consultant Services Division

R[illegible]
EPA REGION IV
E.I.S. [illegible]
[illegible]

JUN 12 1978

1504 Shelley Place
Lakeland, Florida 33803
May 8, 1978
-813 644 3962

Honorable Lawton Chiles
United States Senate
Federal Building
Lakeland, Florida 33802

Dear Senator Chiles:

After a thorough review of the Draft Areawide Environmental Impact (DEIS) dated March 1978, I felt it necessary to enlighten you on several aspects of the document which, in my opinion, have been erroneously reported. I have been employed by the phosphate industry for eight years as a mechanical engineer and I feel that I am qualified to provide an accurate rebuttal to the DEIS. I, too, enjoy living in the Central Florida area and I am not interested in being a part of environmental pollution. However, there is a way for industry and the environment to coexist for the betterment of all people concerned.

W-427 With regard to the summary of major environmental impacts, it would be incorrect to assume that recreational resources will be reduced with phosphate mining. The property now owned by phosphate companies generally contains no recreational areas. One of the major benefits of a phosphate reclamation program is to install lakes and parks as a part of the overall plan. Most any fisherman in the study area will tell you that the best fishing can be found in reclaimed phosphate pits which are usually stocked by the phosphate companies. One company intends to construct a reservoir as a part of their program. Other than the obvious municipal benefit, the lake will provide outstanding recreational facilities for boating and fishing in an area that is currently void of this resource.

W-418 One of the proposed actions for new source mines is to eliminate conventional above-ground slime (clay) - disposal areas. If this action is implemented as an industry-wide practice, the effects upon phosphate mining could be disastrous. There is a wide range of percent clays contained in ore bodies when comparing one mine to another. Due to the amount of water tied up in various types of clays, one mine may require considerably more volume than another. If this volume is to be contained below ground, the plan area would far exceed mined out areas thereby rendering the mining operation uneconomical. Even with sand-clay mixing of waste material, it would not be at all feasible to totally eliminate above ground storage. Also, with regard to the containment structures, there are many references to the potential threat of a dike failure in the DEIS. Several years ago I would have agreed that there was always some threat, however, since the dike failure in 1971, technology, construction methods and inspection programs have all but eliminated this danger. In addition to the improved design and construction of dams, all mines now have various means of positive protection such as continuous monitoring of ground water and daily inspection.

Section 2 contains an item under process modifications for new sources which deals with conveying matrix from the mine to the beneficiation plant. A reprint of a letter from Brewster Phosphates to the EPA describes the relative success of the conveyor at their Lonesome Mine. Unfortunately, there are many factors to consider when determining the economical feasibility of a matrix conveying system. Items such as land contour, mining plan, property layout, reclamation plan and obstacles such as roads and creeks must be carefully studied as they ultimately affect capital and operating costs. The system at Brewster Phosphates can be considered to be in a development stage as they are still experiencing costly problems such as spillage, lost feed when cycloning onto the conveyor and belt slippage. There is a definite energy savings in conveying matrix vs. pumping, however, the savings need to be weighed against the higher capital cost and maintenance of a conveyor system. Due to the variables affecting the economics of a conveyor, it is possible for one operator to realize a savings with a belt, whereas it would be a losing proposition for another mine. W-429

References are made in Section "G" of the Alternative Assessment of Secondary Effects of "Permit Existing and New Sources" to the reduction of the scenic attraction of the area and the danger to the tourist industry. I am sure that everyone agrees that mining activities are located in the more desolate areas of the state and many miles from the multimillion dollar tourist attractions. Furthermore, regulations now require immediate reclamation of mined out land adjacent to highways. Also, processing plants and settling areas requiring dikes are now set well off roadways so as to minimize any scenic alterations. A prime example of this would be Agrico's Ft. Green Mine off State Road 37.

Honorable Lawton Chiles
May 8, 1978
Page Three

I felt it was important to call your attention to my evaluation of the DEIS and I hope you will consider my comments when drafting legislation on EPA rulings.

Very truly yours,

David O Munson

David O. Munson

DOM/jlc

3-294

LAWTON CHILES
FLORIDA

COMMITTEES:
APPROPRIATIONS
BUDGET
GOVERNMENTAL AFFAIRS
SPECIAL COMMITTEE ON AGING
DEMOCRATIC STEERING COMMITTEE

United States Senate
WASHINGTON, D.C. 20510

May 30, 1978

W-430

Mr. John C. White
Regional Administrator, Region IV
Environmental Protection Agency
14201 Peachtree Street, NE
Atlanta, Georgia 30309

Dear Mr. White:

I have recently received the enclosed correspondence regarding a matter involving your agency, and because of my desire to be responsive to all inquiries, I would appreciate having your comments and views.

Your early consideration of this matter will be appreciated, and if convenient, I would like to have your reply in duplicate. In your communication, please return the enclosure and make reference to this letter as indicated below.

Sincerely,

Lawton Chiles
LAWTON CHILES

LC/rob

Enclosure

RE: In reply, please refer to 17/David O. Munson

REPLY TO: FEDERAL BUILDING, LAKELAND, FLORIDA 33801

3-295

Post Office Box 1480
Bartow, Florida 33830
Telephone: 813/533-3181

C F CHEMICALS, INC., Subsidiary of

CF Industries, Inc.
Bartow Phosphate Complex

May 16, 1978

Mr. R. E. McNeill
EPA, Region IV
EIS Branch
Phosphate Study Unit
345 Courtland Street, N.E.
Atlanta, Georgia 30308

Subject: Draft Areawide Environmental
Impact Statement - Central
Florida Phosphate Industry

Dear Mr. McNeill:

As we discussed during our May 15, 1978, telephone conversation, there are a few minor changes recommended for the subject EIS. These are as follows:

1. Page 1.22

   Under 2) Fauna and Flora, the words "special" and "species" in sentence three appear to be transposed. W-431

2. Page 1.53

   The effluent range of 1.8-4.5 pCi/l for treated phosphoric acid plant effluent after double liming gives the reader the impression that 1.8 is the lower end of the range. We have substantial amounts of data revealing that zero is the bottom limit. W-432

3. Page 1.74

   Under 2.b., there is no known basis for claiming that fluoride emissions have increased over the past five years. There have been fluctuations in fluoride grass levels and, perhaps, that is the basis of the claim. W-433

4. Pages 2.27 - 2.31

   The discussion contained within this section is not entirely clear. If it is meant to pertain to rainfall outside the battery limits, we doubt its practicality. Under separate cover we will discuss total impoundment of non-process waters. W-434

5. Page 2.50

The top line indicates radioactivity in the lower Floridan of "196 picocuries per liter". This statement is in error. W-435

6. Page 4.3

Requiring "once-per-shift manual sampling to ensure that automated equipment is efficiently operating" is unnecessary. Presently required monitoring and optional (but generally utilized) alarm systems are all that is necessary to properly protect the environment from spills. W-436

Under separate cover, CF Industries will present a more formal comment on the content and issues of the draft EIS.

Sincerely,

WA Schimming

William A. Schimming
Chief Environmental Engineer

WAS/lm

DORR-OLIVER INCORPORATED

INTERNATIONAL HEADQUARTERS:
STAMFORD, CONNECTICUT 06904, U. S. A.
CABLE: DORROLIVER STAMFORD

May 17, 1978

W-437

Mr. John E. Hagan III
Chief, EIS Branch
EPA Region IV
345 Courtland St., N. E.
Atlanta, Ga. 30308

Re: DEIS, Central Florida Phosphate Industry
Dated - March 1978

Dear Mr. Hagan:

We are suppliers of equipment and engineering to the phosphate industry. Fluidized bed drying of phosphate rock has constituted an important part of our work with that industry; but (1) we span the industry with equipment for many processing methods, and (2) we do not oppose carefully considered and operable regulations to ensure that our drying systems and other systems are clean.

As we read it, the subject DEIS would practically legislate out of existence one of the two principal flowsheets available for beneficiating phosphate rock, namely, the "dry" route. The other route is referred to as "wet". We urge you to avoid such a blanket prohibition.

Some areas in some phosphate rock processing plants using the "dry" system are unquestionably too dusty. Standards should be established to hold dust levels down to acceptable amounts.

As far as rock dryers are concerned, we can demonstrate at existing large installations that our fluidized-bed dryer with reasonable maintenance is clean by the strictest standards in such industries today. If the cost of meeting acceptable standards in areas like rock grinding, product storage and bagging should make capital and operating costs too high (not likely), then, of course, producers would use other flowsheets. They would have been given a choice.

Similarly an economic balance will determine whether the energy spent in drying rock at the mine justifies the extra expense of dust control equipment less savings in freight.

Regarding radiation we do not see evidence that levels are above acceptable figures now, even in plants where dusty conditions exist. When dust levels are lowered, the radiation reported in Section (2), last sentence, top of page 2.87, in the DEIS as being insignificant should be even less. We have requested that Reference USEPA 1977 be sent to us when ready for distribution to the public, but we do not expect any change in this belief after receiving our copy.

To be as specific as possible, we draw your attention to the following sections of the DEIS and make brief comments:

> Page 1.70, Section E, (1) (a), first requirement:
> Establish clean air standards for all areas with particular care for areas that are now found to be dusty.
>
> Page 2.86, (2), last paragraph:
> The first and second sentences in this paragraph are inconsistent. Regarding the first sentence, establish clean air standards. Regarding radiation, cleaner air will mean even safer levels than those existing at present.
>
> Page 3.1, (1):
> Again, establish clean air standards for all areas. We have not received the evidence behind the figures quoted here. The fact that dust can be collected and SO_2, absorbed, appears to have been overlooked.
>
> Page 3.6, (4):
> Again, clean air standards for all areas would get at the crux of what problems there are.

We will arrange for one of our specialists in phosphate rock processing to meet with you and/or make some plant visits with you if greater understanding on both sides would result. Please advise.

Very truly yours,

DORR-OLIVER INCORPORATED

L. V. Lee
Thermal Processing Division
Telephone: 203-348-5871 X774

LVL/vjl

cc: Mr. R. L. Klaer, Dorr-Oliver-Atlanta

700 TWIGGS STREET
SUITE 800
TAMPA, FLORIDA 33602
TELEPHONE (813) 272-5940

HILLSBOROUGH COUNTY PLANNING COMMISSION

JOHN A. CRISLIP
EXECUTIVE DIRECTOR

GRADY SWEAT
[illegible]
DR. GORDON BRUNHILD
[illegible]
NOREEN FOLLMAN
[illegible]
HENRY C. BROWN
EMORY M. CARTER
ROBERT EDWARDS
MANUEL M. FERNANDEZ
WARREN H. JOHNSON
E. J. RAWLS JR
ROBERT THOMAS

June 22, 1978

Mr. John C. White
Regional Administrator
Environmental Protection Agency
Region VI
345 Courtland Street, Northeast
Atlanta, Georgia 30308

Attn: Mr. Gene McNeil
EIS Branch

Re: Draft Areawide Environmental
Impact Statement, Central
Florida Phosphate Industry

Gentlemen:

The following presents the initial comments and recommendations of the Hillsborough County Planning Commission staff on the above-referenced EIS.

We concur with the general thrust of the proposed action and commend EPA for its comprehensive treatment of this subject. We especially appreciate EPA's understanding of the extremely long time periods which are required in the reestablishment of mature forested wetlands.

Our major concern at this time is that the EIS might inadvertently weaken the implementation of adopted comprehensive plans at the State and local levels. In particular, the protection of wetlands may suffer unless the EIS is modified to include more explicit support for locally adopted comprehensive plans which protect wetlands which are under local jurisdiction but which may or may not be under direct federal jurisdiction. W-438

In order to illustrate the types of pertinent policies which may be found in local comprehensive plans, we have attached excerpts from the Conservation Element of the Hillsborough County Horizon 2000 Plan -- all of which is incorporated by reference into Hillsborough County Ordinance No. 77-26. Pursuant to the requirements of Chapter 75-390 Laws of Florida, the Horizon 2000 Plan was adopted by the Planning Commission on August 1, 1977, and adopted by the Board of County Commissioners on November 30, 1977.

It is recommended that the following modifications be made to the EIS in order to alleviate our major concern:

1. On page 1.70 change item E.l.a(2) to read:

   "Meet the effluent limitations of the State of Florida and of local environmental protection commissions for all discharges, including but not limited to dredge and fill activities in the waters of the counties." W-439

2. On page 1.70 add a new item between items E.l.a.(2) and E.l.a.(3) to read:

   "Comply with all goals, policies, and guidelines of locally adopted comprehensive plans, to the extent that they are not in direct conflict with the State Comprehensive Plan." W-440

3. On page 1.72 add a third paragraph to item E.l.a.(9) which would read:

   "Local environmental laws, ordinances, rules and regulations which are stricter or more extensive than federal wetland standards shall prevail." W-441

Please do not hesitate to contact us if we can be of further assistance.

Sincerely,

Gary S. Ellis

Gary S. Ellis, Chief
Environmental Section

GSE:kvh

Attachments

3-301

CONSERVATION ELEMENT
of
HORIZON 2000 PLAN

GOAL

Conserve natural and environmental resources for present and future generations.

POLICIES

1. Hillsborough County hereby recognizes that the air and water including, but not limited to, lakes, rivers, bays, streams, fresh and salt water marshes, aquatic vegetation and animals, and natural shorelines are necessary for the maintenance of a high quality environment. The enactment and continued enforcement of land development regulations which avoid the destruction or alteration of such ecosystems are necessary for the protection and improvement of the quality of the environment.

2. Hillsborough County hereby recognizes that the other environmental features native to the County as described in the Conservation Element perform a valuable function in providing the public with livable surroundings; and, thus, these features are in need of adequate protection if such advantages are to be maintained for future generations.

3. Hillsborough County hereby recognizes that the full and proper utilization of all governmental powers is necessary and desirable to help achieve the above Goal.

GUIDELINES

Air Resources

1. Discourage the location of new point sources of air pollution which would adversely impact existing areas of heavy pollution concentration.

2. Minimize total air pollution emissions from point sources to the extent practicable, in keeping with both socio-economic and environmental considerations, by encouraging the best available air pollution control technology and by encouraging the recruitment of clean industry.

3. Minimize total air pollution emissions from nonpoint sources by appropriately guiding land development and by improving the flow of traffic.

- maintaining the naturally free-flowing character of navigable rivers and streams, and
- preventing shoreline erosion, preferably by means of vegetation and the utilization of other shoreline stabilizing techniques that blend in with the natural environment.

19. Safeguard the scenic portions of the visual corridor of the proposed Interstate 75 extension in a timely and exemplary fashion.

20. Maintain and enhance the quality of the nighttime environment, by eliminating those outdoor lighting devices which do not efficiently perform a necessary function and by controlling air pollution.

21. Ensure the optimum management of native shade trees.

22. Minimize serious noise and odor pollution by separating incompatible land uses.

23. Maximize the percent of open space in each new development.

Earth Resources

24. Minimize the waste of earth resources by:

    - discouraging the permanent development of lands underlain by valuable and potentially valuable mineral deposits (see Glossary) prior to the mining thereof, and
    - encouraging resource recovery by promoting source reduction and recycling of solid waste, and
    - encouraging the constructive disassembly of buildings so that the building materials can be reused.

25. Identify, evaluate, and mitigate possible hazards associated with reclaimed lands, unreclaimed mined lands, and unmined mineral lands.

26. Minimize the adverse impacts of mining by:

    - prohibiting mining in rivers, streams, and alluvial wetlands, except in extreme cases of overriding public interest, and
    - requiring timely reclamation--using best available technology to reestablish, or establish, an optimum mix of land forms, land uses, and natural vegetation associations.

GLOSSARY*

A. Alluvial wetlands - This natural vegetation association is found on frequently-flooded areas which consist of sediments of mixed origin that have been deposited near streams and which are mapped as Ac and Pc soils by the Soil Conservation Service. The dense hammock vegetation includes, gum, maple, live oak, water oak, ironwood, hickory, cypress, cabbage palmetto, vines, shrubs, and a few grasses and pines.

B. Aquatic preserves - These are publicly-owned submerged lands which are covered by salt or brackish water and which are recognized by law or regulation as having exceptionally high biological, aesthetic, educational and/or scientific value.

C. Cases of Extreme Overriding Public Interest mean cases in which:
1. The proposed action is found to have primary and direct benefit to the public of the County; and
2. All reasonable alternatives to the proposed action have been presented to and fully considered by the governing body; and
3. All alternatives are found to be publicly unacceptable or are found to entail substantially greater cost to the public or both; and
4. All environmental impacts of the proposed action have been presented to and fully considered by the governing body; and
5. All potentially adverse environmental impacts have been minimized to the greatest extent feasible; and
6. The proposed action complies with all applicable federal, State, and local environmental control laws.

D. Cases of Overriding Public Interest mean cases in which:
1. The proposed action is found to have substantial benefit to the public of the County; and
2. All reasonable alternatives to the proposed action have been presented to and fully considered by the governing body; and
3. All alternatives are found to be publicly unacceptable or are found to entail substantially greater cost to the public or both; and
4. All environmental impacts of the proposed action have been presented to and fully considered by the governing body; and
5. All potentially adverse environmental impacts have been minimized to the greatest extent feasible; and
6. The proposed action complies with all applicable federal, State, and local environmental control laws.

E. Class I Waters - These are surface waters that are used as a potable source of public water supplies or withdrawn for treatment as such.

F. Class II Waters - These are coastal waters in areas which either actually or potentially have the capability of supporting recreational or commercial shellfish propagation and harvesting.

- providing nonmonetary compensation where possible by means of administrative and regulatory procedures--even though not required by law to provide any compensation,
- giving equal attention to acts of government that result in "windfall" benefits to property owners as well as those acts which may result in "wipeout" losses,
- ensuring that "windfall" benefits which accrue to individual property owners as a result of governmental action are identified and that adequate means are established whereby the public may be compensated for such unearned gains,
- encouraging programs designed to increase the amount of accurate biophysical information available to all buyers and sellers in the marketplace for land, and
- encouraging appropriate reforms of the tax system.

38. Encourage both private and public sectors to make a concerted effort to bring existing laws, regulations, governmental practices, and private actions into alignment with the letter and the spirit of this Plan. However, existing environmental laws and regulations which are stricter or more extensive than this Plan shall continue to be enforced; and such laws and regulations shall be the minimum standards; and nothing in this Plan shall be construed to state or imply a goal, policy, or direction which is inconsistent with such stricter or more extensive laws or regulations.

39. Favor preventive management so as to minimize the need for corrective action.

40. Favor modified compact growth and appropriate types of cluster development over urban sprawl.

41. Give timely and favorable attention to the following actions in addition to all other specific action policies in this Plan:

    - ensure that all lands and waters in this jurisdiction are zoned and/or rezoned in a timely fashion in order to appropriately implement this element of the Horizon 2000 Plan.
    - disapprove all rezoning applications within conservation areas unless the application is for a planned development which requires detailed site plan review following specific guidelines and criteria,
    - eliminate from the capital improvements budget and program all projects which cannot be modified so as to conform to this Plan, and
    - promote maximum feasible participation of citizens in the decision-making process.

P. O. Box 1305
Punta Gorda, Florida 33950
June 13, 1978

Mr. John E. Hagan III, Chief
EIS Branch, Region IV
U. S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30308

W-442

Dear John:

I wish to reemphasize some of the concerns I expressed at the public hearing regarding the impact of the phosphate industry on our area and its residents.

The Peace River already is a regional potable water supply for residents in DeSoto, Sarasota, and Charlotte Counties and possibly on down to Boca Grande in Lee County. Nowhere in the Draft EIS did I see where it pointed out the present and future potential use of the Peace River as a potable water source. Attached is a letter on the use of the Peace River by General Development Utilities, about which I had questioned Mr. Harold E. Schmidt. I wish for this letter to be included as part of the record on the Draft EIS.

Many other municipalities along the Peace River may one day have to make withdrawals from the river for their drinking water. Attached is a copy of a report by Tri-County Engineering, Inc. for the City of Punta Gorda on future source of water for the city.

The reason the City of Arcadia had to stop using the river for drinking water was because of the quality due to phosphate spills. If the inland well fields go bad, then the only other source will be surface water from the Peace River Basin.

We have attempted to upgrade and reclassify the Peace River in DeSoto County to Class I Water (Potable) in an effort to better protect it.

The 208 plans should also address water quality in the Peace River Basin and not only all new, but also existing sources of pollution be required to conform to the 208 plans.

Not only is water quality important, but also quantity. We need runoff, which, in turn, makes flow. Adequate flow in the Peace River is essential to maintain the ecological balance in the Charlotte Harbor Estuarine complex. Therefore, total water retention by the industry would be very harmful.

Again, I wish to reiterate the need for timely and adequate monitoring on all aspects of phosphate mining from EPA, DER, DNR, water management districts to the local county level. All of the rules, regulations, policies, are worthless, unless they are beneficial, followed and enforced.

We in Charlotte County are vitally interested in the Peace River and Charlotte Harbor because, this without question, it is the greatest natural resource we have in our area.

Thanks again for all the listening you have done and I hope the final EIS will be a very good one.

Sincerely,

Bucky

Robert N. McQueen
Advisory Committee Member
Charlotte County, Florida

RNMcQ:dd

JUL 1 8 [illegible]

General Development Utilities, Inc.

June 5, 1978

Mr. Bucky McQueen
Phosphate Industry
E.I.S. Advisory Committee Member
P. O. Box 1305
Punta Gorda, Florida 33950

Dear Bucky:

I have been requested to update the information you may have available on the General Development Utilities Water Plant now being constructed on the Peace River.

This Water Plant is being constructed to provide the potable water needs of the Port Charlotte area and its surrounding environs. The Plant, as presently constructed, will have an initial capability of six to seven million gallons per day. However, present structural components of the Plant have been designed for 30 million gallons per day. There is sufficient land being maintained to expand the Plant and transmission main well beyond its present design.

The Peace River was chosen because it offered an adequate supply of high quality surface water easily treatable by conventional water treatment methods. The energy needed to treat this type of water is lower than that necessary to treat water by the reverse osmosis process. The amount of chemicals required to treat this water as compared to existing ground water in the areas is also less. We have, therefore, the best of all situations on adequate quantity of fresh water easily treatable by conventional low energy treatment systems. This fresh water source, we believe, is being put to its best beneficial use by providing a high quality potable water supply to the citizens of Florida at the most economical price possible.

We have been approached in the last year by other associations requesting water from the Peace River Plant. These include Rotunda, Gasparilla Island, Englewood and Sarasota County. You see, therefore, that the Plant could indeed serve as a regional water source for this whole area of Florida.

We are studying ways of moving water from our waterway systems of Port Charlotte and Sarasota County to our reservoir system in DeSoto County. This will help supplement the water supply from the Peace River and help us keep the reservoir to a reasonable size. The Peace River, however, is intended to be the main source of water and to be the prime source of water to meet this area's needs.

1111 South Bayshore Drive Miami, Florida 33131 Telephone 305 350 1331
A General Development Subsidiary

When the existing facility is constructed to its present planned capacity, our investment will exceed 30 million dollars. Our commitment to the Peace River as our source of potable water, as you can see, is substantial. Anything to degrade the quality of the water as it now exists will certainly have an impact on the citizens on this coast of Florida.

The Plant is scheduled to be completed by March of 1979. Should you or your Committee care to go through the facility, we would be pleased to show it to you. Most structural work is completed, and we are in the process of installing the mechanical and electrical equipment.

If you need additional information on our Peace River Plant, please do not hesitate to contact me.

Sincerely,

Harold E. Schmidt
President

HES:mgf

cc: Wayne Allen
C. C. Crump
Dan Dennison

3-309

SECTION V - PEACE RIVER POTENTIAL

The Peace River would provide a water supply of more than adequate quantity for many years to come. The average discharge at Arcadia is 1,250 cfs and at Punta Gorda is estimated at over 2,000 cfs, and during peak flows has reached over 30,000 cfs. Water quality is such that normal treatment will adequately provide potable water (see following tabulations).

The salinity line above which a potable water supply source should be located, lies near Fort Ogden. A raw water transmission line of some 12 miles in length would be required to convey the water to the Shell Creek Plant. Accompanying this, a diversion structure must be placed in the Peace River in such a way as to preclude inasmuch as possible the intake of phosphate slimes in the event of a spill.

As a potential source, the Peace River qualifies in all categories except one. That category is economics and even though feasible, the cost to the community would be greater than other sources.

Form 9-240-7 SW Annual No. 7 U. S. DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY

1968
Florida

2-2967.5 Peace River at Arcadia, Fla.

Location.--Lat 27°13'19", long 81°52'34", in SE¼ sec.26, T.37 S., R.24 E., on left bank 500 ft upstream from bridge on State Highway 70, 1.0 mile west of post office in Arcadia, De Soto County, 6.1 miles upstream from Joshua Creek, and 36 miles upstream from mouth.

Drainage area.--1,367 sq mi.

Records available.--April 1931 to September 1968. Prior to October 1950, published as Peace Creek at Arcadia.

Gage.--Digital water-stage recorder. Datum of gage is 6.00 ft above mean sea level, datum of 1929; Mar. 20, 1964 to July 11, 1967, staff gage at mean sea level. Prior to July 19, 1931, staff gage, and July 19, 1931 to May 16, 1963, graphic water-stage recorder, and May 16, to Sept. 30, 1963, digital water-stage recorder at same site at datum 2.25 ft higher. All gage heights are at gage datum.

Average discharge.--37 years, 1,252 cfs.

Extremes.--Maximum discharge during year, 7,030 cfs July 13 (gage height, 12.66 ft); minimum, 60 cfs May 6 (gage height, 1.20 ft).

1931-68: Maximum discharge, 36,200 cfs Sept. 9, 1933 (gage height, 19.92 ft, present datum); minimum, 37 cfs May 28, 1949; minimum gage height, that of May 6, 1968.

Maximum stage known, 20.6 ft (present datum) in 1912, from information by county engineer (discharge, 43,000 cfs, from rating curve extended above 30,000 cfs).

Remarks.--Records good. Records of chemical analyses and water temperatures for the water year 1968 are published in Part 2 of this report. See page 105 for table of gage height.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4,080	303	207	261	232	243	156	114	256	3,880	1,480	1,470
2	3,740	326	200	256	242	215	137	114	215	4,280	1,490	1,360
3	3,080	323	212	268	225	206	124	102	219	5,030	1,760	1,140
4	2,450	306	223	237	211	220	165	74	977	5,300	1,910	947
5	2,010	317	223	212	245	239	159	68	2,370	5,540	2,140	828
6	1,740	323	210	197	247	220	143	62	3,180	5,520	2,290	832
7	1,730	303	208	204	248	223	112	98	3,610	5,450	2,220	1,290
8	1,700	258	204	224	247	225	124	111	3,920	5,800	1,930	1,860
9	1,590	244	205	235	224	234	145	111	4,320	6,180	1,660	2,240
10	1,790	235	207	242	187	234	141	97	4,950	6,450	1,440	2,490
11	1,540	221	246	248	195	224	144	92	5,550	6,780	1,270	3,130
12	1,420	225	348	225	202	233	130	93	5,750	6,910	1,170	3,740
13	1,190	244	553	225	197	235	150	140	5,410	7,000	1,190	4,240
14	1,200	266	561	235	208	242	136	181	4,700	6,930	1,060	4,540
15	877	296	482	254	200	277	133	198	4,210	6,700	856	4,730
16	765	293	401	268	191	263	128	212	4,930	6,180	712	4,730
17	681	236	333	239	179	256	135	156	4,190	5,510	649	4,670
18	616	208	312	224	162	248	143	172	4,260	5,860	669	4,380
19	560	233	302	272	209	258	127	141	4,340	6,200	704	3,750
20	508	214	290	215	245	245	99	127	4,200	6,030	803	2,950
21	445	214	287	209	284	240	97	138	4,110	5,890	947	2,230
22	413	231	276	232	257	203	97	138	4,130	5,500	850	1,750
23	410	236	256	258	236	186	93	117	4,200	6,130	663	1,470
24	392	246	241	254	249	173	82	115	4,090	5,810	567	1,260
25	383	268	245	249	318	159	75	137	3,630	5,470	606	1,130
26	362	265	235	222	311	155	78	291	3,020	4,830	682	1,030
27	350	244	239	206	290	163	100	407	2,790	4,730	827	987
28	338	216	293	213	281	167	100	386	3,530	2,640	932	988
29	338	210	293	234	267	172	86	332	3,460	1,970	1,160	989
30	365	221	257	238	------	168	103	362	3,000	1,690	1,390	918
31	335	------	255	234	------	153	------	326	------	1,560	1,490	------
TOTAL	37,402	7,695	8,501	7,250	6,789	6,679	3,630	5,263	107,027	163,150	37,537	68,069
MEAN	1,207	256	274	234	234	215	121	170	3,568	5,263	1,211	2,269
MAX	4,080	326	561	268	318	277	165	407	5,750	7,000	2,290	4,730
MIN	335	208	200	197	162	153	75	62	215	1,560	567	828
CFSM	.88	.19	.21	.17	.17	.16	.09	.12	2.61	3.85	.89	1.66
IN.	1.02	.21	.24	.20	.18	.18	.10	.14	2.91	4.44	1.02	1.85

CAL YR 1967 TOTAL 276,071 MEAN 756 MAX 4,990 MIN 46 CFSM .55 IN 7.51
WTR YR 1968 TOTAL 460,182 MEAN 1,257 MAX 7,000 MIN 62 CFSM .92 IN 12.52

3-311

02296750 PEACE RIVER AT ARCADIA, FLA.

LOCATION.--Lat 27°13'19", long 81°52'34", DeSoto County, at gaging station, on left bank 500 feet upstream from bridge on State Highway 70, 1.0 mile west of post office in Arcadia, 6.1 miles upstream from Joshua Creek, and 36 miles upstream from mouth.

DRAINAGE AREA.--1,367 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1961 to September 1969.
Water temperatures: February 1962 to September 1969.

EXTREMES, 1968-69.--Fluoride: Maximum daily, 1.9 mg/l on several days during May and June; minimum daily, 0.5 mg/l Sept. 3 and 4.
Phosphate: Maximum daily, 11 mg/l Dec. 19 and April 20; minimum daily, 1.6 mg/l March 18.
Specific conductance: Maximum daily, 450 micromhos May 14, 16; minimum daily, 80 micromhos Sept. 4.
pH: Maximum daily, 7.7 Oct. 6; minimum daily, 6.4 March 16, Aug. 19, Sept. 3, 4.
Turbidity: Maximum daily, 350 mg/l as Silica Jan. 1; minimum daily, 3 JTU on July 22.
Water temperatures: Maximum, 36°C on Aug. 1; minimum, 3°C Dec. 16.

EXTREMES, 1961-69.--Dissolved solids (1961-67): Maximum, 335 mg/l May 11-20, 1967; minimum, 50 mg/l Aug. 21-25, 1963.
Hardness (1961-67): Maximum, 224 mg/l May 11-20, 27, 1967; minimum, 21 mg/l Sept. 20-28, 1962.
Fluoride (1963-69): Maximum daily, 3.9 mg/l Feb. 13 and Apr. 4, 1966; minimum daily, 0.4 mg/l Aug. 9, 10, 1966 and June 11, 1968.
Phosphate (1963-69): Maximum daily, 29 mg/l May 27, 1967; minimum daily, 1.4 mg/l Mar. 14, 1967.
Specific conductance: Maximum daily, 1,750 micromhos Feb. 3, 1963; minimum daily, 45 micromhos Sept. 23, 1962.
pH: Maximum daily, 8.3 units Mar. 31, 1968; minimum daily, 5.1 units Mar. 1, 1963.
Turbidity (1962-69): Maximum daily, 200 mg/l as Silica July 16, 1962; minimum daily, 0 mg/l as Silica on several days in October 1965, August 1966, many days during November, December 1967 and September 1968.
Water temperatures: Maximum, 35°C on several days during July and August; minimum, 3°C Dec. 16, 1969.

REMARKS.--Turbidity values through May 1969 were reported as milligrams per liter of Silica, values for June through September 1969 were reported as Jackson Turbidity Units.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	TEMP-ERATURE (DEG C)	SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)
OCT.									
01...	--	28	9.0	60	28	8.7	12	1.4	57
15...	--	27	1.0	70	32	10	13	1.5	59
30...	--	20	9.2	80	24	7.5	12	2.0	39
31...	--	25	--	--	--	--	--	--	--
NOV.									
01...	--	23	10	60	29	9.1	13	1.4	49
15...	--	16	5.8	80	15	5.5	10	1.9	27
29...	--	19	8.5	50	33	11	14	1.6	59
30...	--	26	7.6	60	35	11	15	1.6	56
DEC.									
15...	--	59	8.2	30	43	14	16	1.4	86
30...	--	17	5.5	30	--	14	17	2.1	84
31...	--	--	--	--	--	--	--	--	--
JAN.									
05...	--	15	7.7	50	35	11	15	3.2	0
15...	--	12	6.7	50	29	9.6	15	2.6	64
23...	455	18	7.7	40	32	11	15	2.4	67
28...	--	18	7.8	40	34	12	16	2.3	74
31...	--	20	--	--	--	--	--	--	--
FEB.									
02...	--	17	6.9	60	37	13	17	2.0	82
16...	--	17	7.1	60	33	12	17	2.4	75
27...	--	14	6.8	40	35	12	18	2.1	76
29...	--	13	--	--	--	--	--	--	--
MAR.									
01...	--	17	8.4	30	38	12	12	2.0	81
12...	4340	15	4.5	70	13	4.8	9.0	2.4	22
15...	--	15	4.4	90	14	5.3	9.7	2.0	28
31...	--	22	5.4	90	22	7.5	11	2.1	49
APR.									
01...	--	19	5.3	50	22	7.7	14	1.8	50
15...	--	20	9.8	100	41	13	17	1.3	74
15...	--	24	--	--	21	7.5	--	--	--
29...	--	24	2.2	50	41	14	16	1.0	81
30...	--	22	--	--	--	--	--	--	--
MAY									
31...	--	26	--	--	--	--	--	--	--
JUNE									
30...	--	31	--	--	--	--	--	--	--

3-312

02296750 PEACE RIVER AT ARCADIA, FLA.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	DIS-CHARGE (CFS)	TEMP-ERATURE (DEG C)	SILICA (SIO2) (MG/L)	DIS-SOLVED IRON (FE) (UG/L)	CAL-CIUM (CA) (MG/L)	MAG-NE-SIUM (MG) (MG/L)	SODIUM (NA) (MG/L)	PO-TAS-SIUM (K) (MG/L)	BICAR-BONATE (HCO3) (MG/L)
JULY									
01...	—	26	.6	—	29	10	14	1.1	63
10...	451	30	1.4	—	31	9.7	14	1.3	57
15...	—	30	5.8	—	39	12	15	1.2	68
18...	--	28	5.8	—	16	6.1	8.4	2.1	36
29...	--	28	5.4	—	21	7.3	10	1.2	44
30...	—	26	11	—	23	8.1	12	1.4	56
31...	--	25	—	—	—	—	—	—	—
AUG.									
02...	—	29	8.5	—	22	7.7	11	1.6	44
15...	—	28	7.2	—	13	4.7	7.0	1.8	28
21...	2530	29	7.7	—	14	5.3	8.1	1.6	31
31...	--	24	—	—	—	—	—	—	—
SEPT.									
01...	—	29	9.6	—	21	7.5	11	1.5	48
28...	—	24	6.9	—	11	4.5	7.2	1.5	24
30...	—	25	—	—	—	—	—	—	—

DATE	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	FLUO-RIDE (F) (MG/L)	NITRITE (NO2) (MG/L)	NITRATE (NO3) (MG/L)	ORTHO PHOS-PHATE (PO4) (MG/L)	PHOS-PHATE (PO4) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)
OCT.								
01...	57	8.0	1.5	—	.3	7.3	—	161
15...	63	14	1.5	—	7.7	5.5	--	181
30...	50	14	1.5	—	.3	5.1	—	145
31...	—	—	1.7	.02	1.0	6.2	6.2	—
NOV.								
01...	60	14	1.6	—	.3	6.4	—	169
15...	32	16	.6	—	.2	3.0	—	103
29...	74	14	1.2	—	.3	8.1	—	193
30...	86	3.0	—	—	—	—	—	—
DEC.								
15...	98	16	1.4	—	.1	8.0	--	247
30...	93	16	1.2	—	.1	7.7	—	241
31...	—	—	1.3	—	—	9.5	—	—
JAN.								
05...	81	18	1.0	—	.5	7.3	--	209
15...	55	18	1.0	—	2.0	4.2	—	175
23...	67	18	.9	—	.1	5.3	—	192
28...	74	14	1.0	—	.2	5.9	—	203
31...	—	—	1.1	.00	.0	6.2	—	—
FEB.								
02...	83	13	1.4	—	.5	6.1	—	220
16...	73	14	1.2	—	1.4	5.3	—	204
27...	72	13	1.5	—	4.0	4.6	--	207
28...	—	—	1.4	.17	.1	4.6	5.2	—
MAR.								
01...	70	18	1.2	—	2.7	5.0	—	209
12...	26	14	.5	—	.4	3.7	—	89
15...	32	10	.7	—	.6	2.2	—	95
31...	41	17	1.0	—	2.0	3.6	4.2	137
APR.								
01...	46	17	.9	—	1.5	4.5	4.6	146
15...	92	16	1.5	—	2.6	9.1	9.3	239
15...	38	14	—	—	--	—	--	--
29...	95	17	1.4	—	.0	6.0	6.0	234
30...	--	--	1.5	.01	1.3	6.8	—	--
MAY								
31...	--	—	1.9	.03	.1	8.5	9.0	—
JUNE								
30...	--	--	1.3	.16	1.7	4.8	4.5	--

3-313

300 PEACE RIVER BASIN

02296750 PEACE RIVER AT ARCADIA, FLA.

CHEMICAL ANALYSES, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DATE	SULFATE (SO4) (MG/L)	CHLO-RIDE (CL) (MG/L)	FLUO-RIDE (F) (MG/L)	NITRITE (NO2) (MG/L)	NITRATE (NO3) (MG/L)	ORTHO PHOS-PHATE (PO4) (MG/L)	PHOS-PHATE (P34) (MG/L)	DIS-SOLVED SOLIDS (SUM OF CONSTI-TUENTS) (MG/L)
JULY								
01...	60	15	1.2	.01	.0	4.4	—	166
10...	67	12	1.3	.01	.8	3.8	—	170
15...	92	23	1.6	.01	.8	6.0	—	227
18...	26	12	.8	.01	2.6	2.7	—	98
29...	61	13	1.1	.01	1.6	3.7	—	125
30...	63	14	1.1	.01	3.6	4.8	—	147
31...	—	—	1.3	.01	1.7	4.9	4.6	—
AUG.								
02...	45	13	1.1	.01	2.1	4.2	—	138
15...	22	11	.8	.01	.0	2.5	—	83
21...	26	10	.9	.01	2.0	2.6	—	91
31...	—	—	1.1	—	—	3.6	—	—
SEPT.								
01...	38	11	1.0	.01	2.8	4.3	—	127
20...	20	10	.7	.02	.0	2.5	—	76
30...	—	—	.7	.05	.7	2.5	2.7	—

DATE	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L)	HARD-NESS (CA,MG) (MG/L)	NON-CAR-BONATE HARD-NESS (MG/L)	SPECI-FIC COND-UCTANCE (MICRO-MHOS)	PH (UNITS)	COLOR (PLATI-NUM-COBALT UNITS)
OCT.						
01...	180	106	59	270	7.2	100
15...	189	121	73	290	7.4	80
30...	164	91	59	238	7.2	120
31...	—	—	—	260	7.2	—
NOV.						
01...	198	110	70	278	7.5	100
15...	78	60	38	160	7.2	120
29...	224	120	80	290	7.6	80
30...	—	—	—	290	7.4	50
DEC.						
15...	266	165	97	380	7.3	40
30...	255	165	96	370		40
31...	—	—	—	380	7.4	—
JAN.						
05...	226	133	85	305	7.1	60
15...	197	112	60	265	7.2	80
23...	212	125	71	329	7.3	50
28...	232	135	76	300	7.4	50
31...	—	—	—	325	7.2	—
FEB.						
02...	235	146	79	360	7.1	50
16...	219	132	71	339	7.2	50
27...	225	137	75	340	7.2	50
28...	—	—	—	340	7.2	—
MAR.						
01...	233	145	79	340	6.9	40
12...	116	52	34	170	6.5	100
15...	125	57	34	159	6.9	120
31...	160	66	46	220	7.1	100
APR.						
01...	162	87	46	230	7.5	60
15...	249	156	95	365	7.5	25
15...	—	84	—	190	—	—
29...	243	160	94	350	7.8	25
30...	—	—	—	353	7.1	—
MAY						
21...	—	—	—	410	7.6	—
JUNE						
10...	—	—	—	290	7.1	—

3-314

AMAX Chemical Corporation
A SUBSIDIARY OF AMAX INC
402 SOUTH KENTUCKY AVENUE · SUITE 600 · LAKELAND, FLORIDA 33801 · (813) 687-2561

JAMES L. COX
VICE PRESIDENT

June 23, 1978

Mr. John E. Hagan, III
Chief, Environmental Impact Statement Branch
U. S. Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, Georgia 30308

JUN. 2 8. 1978

Dear Mr. Hagan:

During the past several months, AMAX's Florida staff and related personnel have analyzed the Central Florida Phosphate Industry Draft Areawide Environmental Impact Statement to understand the technical bases upon which EPA has recommended new regulatory restrictions, assess the potential environmental benefits attributable to these recommendations, and evaluate the technical and economic feasibility of implementation. The following comments represent AMAX's views with respect to the policies EPA will be proposing in the final areawide EIS. Because of the detailed point-by-point technical comments delivered by others at the three public hearings, our comments address the recommended policies contained in the draft EIS.

I. Protection of Wetlands

W-443

The concept of preserving and restoring wetlands to increase the diversity of reclaimed areas, maintain surface water quality, and provide suitable wildlife habitat should enhance the quality of life in the study area in future years. Discussions with EPA staff, testimony at the public hearings, and papers presented at technical seminars confirm that the public holds widely divergent opinions regarding the goals to be attained through wetland restoration efforts; the techniques for creating self-sustaining wetlands following mining; the amounts of land which should be devoted to this use; and the time required to achieve successful restoration. By requiring preservation of the most critical wetland areas, we assume that EPA will not require restoration efforts to create wetlands equalling the preserved Class I wetlands. To do so would result in wetlands homogeneity countercurrent to the basic intent of creating diverse wetlands through restoration.

Early attempts to restore wetland acreages are likely to be less successful than planned because of man's inability to simulate nature, the traditional learning curve, and because EPA's recommendations may not be accepted universally by the governmental units which have jurisdiction over new source mining projects in Florida. These and other related factors dictate the need for EPA to implement reasonable requirements reflecting man's technical and economic capabilities to restore wetlands, the need to balance sometimes conflicting regional and local public interests, and the concepts of diversified multiple land uses. As with other ecological issues, the creation of productive wetland systems requires deliberate and careful attention and may require years to achieve.

The Agency must also carefully assess in the site-specific EIS the detrimental impacts of restricting access to recoverable tonnages of phosphates deposited below wetland preservation areas. A prudent site-specific policy should encourage exploration of these areas to insure that the integrity of NEPA is maintained by including the lost phosphate resources as a consideration in wetlands preservation determinations.

II. Process Water Recirculation

W-444

The recovery and re-use of process water liberated by utilizing one of the emerging waste-clay settling technologies will help conserve the water resources of the region. Site-specific application of these technological advances is an objective to which AMAX is devoting diligent studies and research.

The ability to recover significant quantities of water from clays with varying mineralogical characteristics requires proving an advanced settling technology on a site-specific basis. Further, the use of recirculated process water recovered from rapidly settled clays in new source mines containing less salable pebble product and higher percentages of concentrate product will require improvements in water treatment procedures and/or amine flotation technology. Studies have shown that the use of recirculated water for the amine flotation medium reduces metallurgical recovery and increases reagent consumption resulting in lost phosphate resources. A site-specific environmental analysis may indicate this trade-off to be an irretrievable commitment of resources unworthy of implementation. EPA's January 31, 1978 recommended scenario acknowledged the limits of flotation technology. We believe the final draft should recognize them as well.

III. Eliminate Rock Drying

W-445

The recommendation to eliminate rock drying at new source beneficiation plants differs from the other recommended process modifications because of the potential impacts this requirement will have upon new mines to compete in an international market trading an intermediate product commodity. We note that EPA has recognized that this recommendation has been drafted only considering the seven county study area because of the statement on page 2.21 which reads: "For purposes of effects assessment, this process is applicable to that portion of the mined and beneficiated rock to be chemically processed in the seven county study area." Therefore, we assume that EPA has not considered the economic effects of eliminating rock dryers upon the industry beyond the seven county area.

A review of the market structure of phosphate fertilizer intermediate products confirms that dried phosphate rock is traded internationally. AMAX's market research efforts do not reveal an immediate trend toward international trading of wet phosphate rock. Thus, a requirement that new source mines without captive markets for phosphate rock intermediate products must market wet rock is an illustrative example of an apparently simple environmental regulation which fails to consider all of the direct and induced impacts upon the health of the industry being regulated. We note no comments reviewing the economic impacts induced by this regulation other than energy considerations. The intent of NEPA will not be fulfilled by limiting the effects assessment to the seven county region.

When drafting this requirement, we do not believe that EPA has given due consideration to the fact that eliminating dryers will effectively restrain new source mines from the international dry rock commodity markets. Limiting an industry's markets will eventually limit that industry's ability to compete domestically as well. Potentially limiting (of) new source mines' output to domestic sales only because of the inability to produce dried rock creates a pricing disequilibrium in domestic phosphate rock markets during the short run which will limit the ability to attract the necessary investment capital to assure a domestic source of supply in the long run. Secondly, elimination of rock dryers at the new source mines of companies not currently producing phosphate in Florida restrains access to markets, which in turn allows existing producers to gain market shares artificially at the expense of free competition. This restraint of trade does not appear to have been considered by the Agency when drafting this recommendation. We believe that the Agency would not have recommended eliminating rock drying at new source mines had these considerations been included in your analysis.

The justification for elimination of rock drying presented in the draft EIS is logical for integrated producers (i.e., those who produce phosphoric acid as well as rock) in Florida. We believe that companies which produce only phosphate rock can build dryers at new source mines which do not endanger public health or significantly degrade air quality by using currently available emission control equipment. The technology of wet scrubbers and wet electrostatic precipitators is well proven. Florida DER air pollution emission limitations and EPA's PSD review requirements have been drafted to protect the quality of ambient air. We believe that these requirements are sufficiently stringent to safeguard air quality and that new source dryers which can meet these requirements should be approved by the Agency.

In closing, we believe that the Agency's study of the environmental impacts of Florida phosphate industry has been worthwhile and beneficial. You should be commended for your efforts to complete the difficult directive assigned you in 1976. As our above comments have indicated, we believe that the health of the phosphate industry can be impaired not only directly but also indirectly by the economic impacts of regulations intended to enhance environmental quality. Both environmental quality and economic vitality are important to Florida and the United States. Thus, direct and indirect environmental and economic impacts of your proposed regulations must be carefully assessed in the final EIS.

Sincerely,

James L. Cox

James L. Cox
Vice President

JLC:nf

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: JUN 22 1978

SUBJECT: Draft Areawide Environmental Impact Statement on the Central Florida Phosphate Industry, Volume VII

FROM: Ray Cunningham, Chief
Air Strategy Development Section

TO: Frank Redmond
EIS Branch

Summary

We have reviewed the subject EIS and would like to make the following comments:

Volume VII, Section I - Atmosphere: This document provides, in part, the historical information to describe typical weather patterns existing in the seven county study area. Topics covered include fog, humidity, temperatures, precipitation, and prevailing winds. It is assumed the data presented is accurate.

Volume VII, Section II - Air Quality: This document contains the procedure used to collect and evaluate data, site locations and bias, and emission inventory and sources of pollution in the seven county area-wide study area. There are only two counties, Hillsborough and Polk, where data is given which indicates violation of SO_2 and TSP NAAQS for the years 1972 mid-1976. (see pages 2.8 and 2.13)

The phosphate industry is identified as contributing 70% of SO_2 emissions in Polk County and 10% in Hillsborough County. 20% of particulates in Hillsborough and 80% in Polk County is caused by the phosphate industry. (see page 2.73)

The treatment and evaluation of the air quality data appears to be adequate and to satisfy its reporting requirements of NEPA. (Disclosure)

~~The project study area covers an area designated by EPA as being Class III for SO_2 and TSP (Sarasota, DeSota, and Charlotte) and Class I for SO_2 and TSP in Hillsborough, Polk, Manatee and Hardee Counties.~~

Action

No additional comments at this time.

Background

Draft EIS attached.

Attachment #195-78

JUN 22 1978

EPA FORM 1320-6 (REV. 3-76)

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
REGION IV
101 MARIETTA TOWER, SUITE 1403
ATLANTA, GEORGIA 30323

June 9, 1978

OFFICE OF THE
Principal Regional Official

Re: HEW-858-4-78

Mr. John E. Hagan, III
Chief, EIS Branch
Environmental Protection Agency
Region IV
345 Courtland Street, N. E.
Atlanta, Georgia 30308

Subject: Central Florida Phosphate Industry

Dear Mr. Hagan:

We have reviewed the subject draft Environmental Impact Statement. Based upon the data contained in the draft, it is our opinion that the proposed action will have only a minor impact upon the human environment within the scope of this Department's review. The impact statement has been adequately addressed for our comments.

Sincerely yours,

Philip P. Sayre

Philip P. Sayre
Regional Environmental Officer
Region IV,DHEW

cc: Ms. A. McGee

Mr. Raymond Goldberg

JUN 14 1978

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32201

SAJEN-EE

14 June 1978

Mr. John E. Hagan III
Chief, EIS Branch
Environmental Protection Agency
Region IV
345 Courtland, NE
Atlanta, Georgia 30308

Dear Mr. Hagan:

The Draft Areawide Environmental Impact Statement, Central Florida Phosphate Industry has been reviewed by elements of the U. S. Army Engineer District, Jacksonville, in accordance with provisions of Section 102 of Public Law 91-190. Our comments follow:

a. On page 1.2, paragraph 2, the Bureau of Mines' conclusion is that the U. S. could be a net exporter of phosphate rock through the year 2000, but that the demand would likely exceed the domestic supply before year 2010. Later in the paragraph is the conclusion that lower grade rock in Manatee and Hardee Counties would become the source for future mining operations. Table 1.1, page 1.3, shows that the total recoverable phosphate rock totals 1,722 million short tons. In our preparation of studies on Tampa Harbor, we obtained data from a local expert consultant to the phosphate industry. The data from that source support an estimate of 2,800-3,000 million short tons of phosphate reserves and resources in the area.

b. The proposed action includes several factors helpful to management of the quantity and quality of water resources. These are:

(1) Meet Florida's effluent limitations for any discharges.

(2) Eliminate conventional above-ground slime-disposal areas.

(3) Meet Southwest Florida Water Management District consumptive-use requirements.

(4) Provide storage capacity for recirculation of water.

(5) Use connector wells to exploit the water-table aquifer and to replenish part of the water pumped from the Floridan Aquifer.

(6) Protect or restore wetlands under the Corps of Engineers Section 404 jurisdiction.

Thank you for the opportunity to comment on the Draft EIS.

Sincerely yours,

James L. Garland

JAMES L. GARLAND
Chief, Engineering Division

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

State Office, P. O. Box 1208, Gainesville, FL 32602

May 15, 1978

Mr. John C. White
Regional Administrator
U. S. Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, GA 30308

Dear Mr. White:

RE: Draft Areawide Environmental Impact Statement on the Central Florida Phosphate Industry

Our major concern within the subject study area would be the land use changes affecting agriculture and soil resources.

The last paragraph on page 2.69 alludes to some change but only to truck crops and citrus acreage. We assume the 100,000 acres of rangelands would be lost or converted to improved pasture and would have an impact on the cattle industry in the area. A percentage of the truck crop land, such as organic soils, may be considered "unique" farmlands.

We feel that methods to lessen impacts of mining such as wetland restoration technology and management practices are particularly important. These concerns should be addressed in the site-specific environment assessment and/or impact statement.

We appreciate the opportunity to review this statement.

Sincerely,

William E Austin
William E. Austin
State Conservationist

cc: R. M. Davis

MAY 18 1978

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: MAY 25 1978

SUBJECT: DEIS, the Central Florida Phosphate Industry

FROM: Walter J. Hunt, Chief, ICB/EGD WHunt 5/23/78

TO: John C. White, Administrator-Region IV
Attn: John E. Hagan, Chief, EIS Branch

THRU: Robert B. Schaffer, Director
Effluent Guidelines Division

Dr. Chester E. Rhines of our staff has reviewed the Draft Areawide Environmental Impact Statement (DEIS) on the Central Florida Phosphate Industry. Attached are comments relative to the Draft EIS. Dr. Rhines can be reached at (202) 426-2582, should you have any questions concerning the attached comments.

Attachments

Comments: Draft of Areawide Environmental Impact Statement
Central Florida Phosphate Industry, EPA 904/9-78-006,
March, 1978

iii. c. 1)a) Ponds will "flush out" perodically unless complete site rainfall runoff management is established. At most sites, runoff must by-pass ponds in excessively rainy periods. The initial run-off sweeps up most site pollution. The subsequent runoff, in heavy rainfall, is normal uncontaminated runoff, and must be by-passed to prevent pond flush out.

iii. c. 2)a) Same comment as preceding comment. The reported volumes of 10 year 1 day rainfall values differ little from 25 year 1 day values. Present regulations prevent flush out only when rainfall in one day is 1/2 of the maximum 10 year (or 25 year) value. Present regulations will not prevent flush out by long rainy periods, i.e. periods over 1/2 day in duration. Excessive rainfall over several weeks is common.

iii. c. 2)b) Same as for C. 2)a) - Note: Severe flush out incidents are highly undesirable. Surface waters may receive massive discharges of SS, fluoride, acidic and radioactive pollutants.

Page 2.5 2.13 - Required reduced water usages - - -? Site drainage management is the key to reducing or eliminating process wastewater discharges at manufacturing plants. Much evaporation occurs from manufacturing plant processes. Most water in use in phosphate manufacturing is recycle water and reduction of "recycle" does not reduce the potential hazard of discharge in periods of excessive rainfall.

Page 4.4 2 - Dam Breaks - Inadequate attention is given to the topic of pond retaining structures. Many breaks have occurred in the past, particularly at mining sites. Massive contamination of surface waters has occurred from these dike breaks. These breaks have had disastrous effects because of discharge of fluorides, radioactive pollutants, acidic water and huge volumes of slime.

The major factors in control of dam breaks is sound design and reliable construction practices. These factors are covered in EPA-440/1-75/043-a, Group I, Phase II, Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Other Non-Fertilizer Phosphate Chemicals Segment of the Phosphate Manufacturing Point Source Category, June 1976.

Some attention should be directed to "Stabilizing" the gypsum piles at wet phosphoric acid plants. These piles yield highly acidic leachate from rainfall percolation. This acidic leachate may continue to contaminate both surface and ground water for many years. The long-term hazard of radio active wastes and fluoride in this leachate should be thoroughly studied.

It may be necessary to develop a liming program for these piles, and to cap with clay, or other impervious material to stop ground water contamination from running long into the future.

Attention should be directed to future problems that may arise from abandonment of elemental phosphorus manufacturing areas. Thousands of tons of elemental phosphorus may be accumulated in recycle pond bottoms. This will remain in the elemental form for extremely long periods (probably for centuries) where the site remains wet. This may be a harmless deposit in a sealed pond not subject to leaching or digging. However, any future development or construction operation that disturbs this site may encounter this hazardous deposit. If these deposits are disturbed and made subject to leaching, the leachate will be phossy water.

It is advisable to drain and aerate these areas, or otherwise arrange for the destruction of elemental phosphorus before the areas are abandoned for phosphate manufacturing.

SECTION 4

RESPONSES TO WRITTEN COMMENTS

(Note: Responses are numbered W-1 through W-455. Numbers are assigned to substantive comments in the margin of the reproduced written submittals in Section 3.)

WRITTEN COMMENTS

W-1

The time frame for effects of mining and reclamation is both immediate and long term, as spelled out in the text of the FEIS and Working Papers.

W-2

The Fish and Wildlife Service contract study by Archbold Biological Station provides documentation on reduced productivity.

W-3

We agree that there is a potential for equalling or exceeding pre-mining recreational resources, but not archeological values or aesthetic aspects.

W-4

As of the date of publication of the DEIS, no new source chemical plants were projected to be located in the study area. We understand that Farmland now proposes a new chemical plant in Hardee Co.

W-5

See text.

W-6

See text.

W-7

See text.

W-8

The statement "mining has not appeared to have played a significant role in the growth of the region since 1960" is believed to be a true one. The statement is not meant to detract from the very large economic role phosphate mining plays in the region. However, as can be seen by examination of Table 1.27, mining has been a somewhat steady economic force while increasing demands for goods and services for the tourist, retirement and recreation purposes seems to have been the stimulus for increased economic growth in the study area.

W-9

Table 1.3 shows Ad Valorem Taxes that have been paid by the phosphate industry. New tax adjustments in Hardee and Hillsborough counties would increase revenues substantially, but until passed into law would only be conjecture.

W-10

Correction made in text.

W-11

Correction made in text.

W-12

Figure has been revised.

W-13

The effects of mining activity on soils are discussed in more detail in the working papers (Volume XI, Section 2/Volume VII-NTIS).

W-14

The study area is part of peninsular Florida. We agree that biological assemblages are shaped by their environment, including members of the assemblage. The environment of peninsular Florida, including the extent of recoverable phosphate reserves, is unique within the United States.

The term 'regional ecosystem' is unclear. We agree that man needs to manage his environment wisely. It seems, however, as indicated most recently by the virtually futile attempts to effect voluntary conservation of energy, that he will not do so unless constrained by laws, regulations, and economics.

W-15

The quoted lines are from the description of the present environment in the EIS, yet the subsequent comment references a discussion of threatened and endangered species (working paper Volume VI, Section 5, p. 5.95). When considered in the proper context, emphasis on the three vertebrates named and the three vertebrate subspecies clearly stems first from their threatened or endangered states as designated by the FGFWFC or the Department of Interior. Secondarily, their endemic status, in conjunction with their range and other factors, was considered in assessing impact relative to other threatened and endangered species. As demonstrated by the recent Supreme Court decision on the snail darter, geographically restricted threatened and endangered species are more likely to be fully protected than those with wider ranges. Thus, the weighting factors used apparently are not unrealistic. Obviously, the endemic biota in the quote from the introduction to the terrestrial biota of the study area includes species other than vertebrates. It is not within the scope of the EIS to name them, nor, undoubtedly, are all of them known. The point to be considered is that peninsular Florida has a high percentage of endemic biota compared with other geographic areas.

W-16

Restoration of natural habitat is not certain, nor even probable under current laws and regulations and reclamation practices, as stated throughout this EIS.

Regarding quantification of natural habitats, several tables are provided in Volume XI (Volume VII-NTIS) listing acres by habitat type.

W-17

On-site visits to reclaimed areas indicate the post-mining conditions of pasture and cropland are as intensively managed as pre-mining conditions.

Most land to be mined is not in pasture and cropland, as this commentary states. In Volume XI of the working papers (Volume VII-NTIS) data indicates that only 32 percent of the land to be mined by the year 2000 will be cropland and pasture.

W-18

The exact amount of pine flatwoods in the entire study area is not available. A detailed vegetation cover map was beyond the scope of this project. The extent of pine flatwoods in pending permit was presented in Volume XI, Section 2 (Volume VII-NTIS). This table does not specify, however, the degree of modification, or intensity of management of the pine flatwoods.

As mentioned in the response to Comment W-17, on-site visits to reclaimed areas indicate the post-mining landscape to be intensively managed. A greater habitat diversity is not the end result of mining.

W-19

We agree that dry, or palmetto, prairies as well as other cover types should be identified and mapped as indicated by a comprehensive statement in working paper Volume XI (Volume VII-NTIS). We regret that such an extensive undertaking was not within the scope of this program. The general distribution of palmetto prairie, as portrayed by the Florida Department of Natural Resources (1975) and adapted from Davis (1967), does include an area in Manatee County that may comprise part of a proposed mining area. Davis (1967), whom you quote later, considers the type endemic to Florida. Again, however, as in the case of endemic species, the initial emphasis on the type stems from its highly endangered status as designated by the Florida DNR.

W-20

Producing a detailed vegetation cover map was beyond the scope of the requirements of this EIS. As mentioned in Volume XI, Section 2 of the working papers (Volume VII-NTIS), a detailed vegetation map was a recognized data gap for impact assessment. Available maps were deficient in characterizing cover types. The DRI's were consulted regarding forest displacement.

The decline in diversity mentioned in this comment was attributed in this EIS primarily to the loss of wetlands, with some decline attributed to loss of deciduous forests, sandhills, sand pine scrub, and dry prairies.

W-21

The value and indeed necessity of a vegetation cover type may of appropriate scale to accurately assess conditions in the study area has been interated several times.

The potential for mining to increase wetlands extent currently is not a possibility.

W-22

Like its phosphate resource, Florida's wetlands resource has nationwide value based on remaining significant extent. The status of wetlands reserve, then, also can be considered a national concern. Unlike the phosphate, however, when the national wetlands resource is used, importation is not a viable mechanism for supplying the resource. The Florida DNR's endangered land designations are responses to the Land Conservation Act of 1972 (Chapter 259, Florida Statutes), which calls for the protection of environmentally unique and irreplaceable lands.

W-23

Assuming the 1956 inventory of wetlands still valid as far as relative extent is concerned, then land areas (Florida and Louisiana) comprising less than 4 percent of the contiguous states contain 30 percent of the wetlands resource. Such concentrations of resources are significant (see above comment).

W-24

The statement stands. Refer to reasons pointed out in Responses to comments T-41, T-42, T-44, T-46, and T-47.

W-25

This quote, which follows the above quote in the text, is part of the description of the study area's present environment and is a lead-in to what may be expected in the impact section. Elaborations supporting the statement are found in the impact section as well as in the effects assessment volume (working paper Volume XI/Volume VII-NTIS).

W-26

This statement also is part of the description of the present environment. It is tantamount to giving acreage of the study area, human population, etc. It is not intended to imply, nor does it, that each species will be impacted - just as each acre or person will not be impacted.

W-27

In compiling the list of special status species, we have expressed the combined views of the Florida Game and Fresh Water Fish Commission, the Department of the Interior, the Florida Committee on Rare and Endangered Plants and Animals, and the Archbold Biological Station report to the FWS.

W-28

The net ecological impact of mining can be mitigated, as we have stated several times by modifying current practices and researching reclamation procedures other than those of greatest economic benefit.

Just as you suggest, the use of "important" when referring to certain species is a reflection of abundance, scarcity, economic significance, recreational significance, and medical significance. All suggestions of importance, the criteria determining important species, and subsequent allusions to their management comprise these very elements. We thought it unnecessary to point out that labeling certain species important does not imply all other species are dispensable.

W-29

We disagree, for reasons abundantly stated, that wetlands and mixed forest habitats will or can be increased following mining. The value to wildlife of existing habitat, although modified and predominatntly agricultural, compared with lake systems, improved pastures, and land awaiting reclamation is addressed in Responses to Comments T-39, T-40, T-44, and T-47. The impact to terrestrial biota was not assessed on the basis of "enormous potential" that is uncertain, heretofore unmentioned, and still unpromised. Neither current projections, reclamation technology nor economics indicate such ecologically sound systems. The projected reclamation, as noted in the existing phosphate DRI's, is primarily improved pasture and lakes (land and lakes); small extents of parkland, plantations, and croplands are projected, and one mine proposes to attempt a small acreage of marsh (working paper Volume XI, Section 2/Volume VII-NTIS).

Before addressing the remainder of your comment, we would like first to point out that mining is evolution, as is glaciation. Secondly, an obvious omission to your comments on glaciation is the importance of Florida as a refugium during recent glaciations and the resultant presence of many relicit populations - several of which occupy sandhills and sand pine scrub habitat.

As for displacement, water is displaced, landuse is displaced, capital investment is displaced, and populations are displaced. The reference obviously means removed from a particular location (or denied) by the mining process and so removed (or denied) for a time span that is meaningful to the judgment of impact. All resources considered in the impact analysis - social, economic, mineral, biological, etc. - will change in the context of geologic time to an extent that cannot be described or even imagined. Geologic time simply is not an appropriate frame of reference for assessing impact here and now and in the foreseeable future. Plants and animals occupying land area that through mining becomes a lake will be permanently displaced from that location.

W-30

Mining alterations to topography and soils do cause changes beyond the tolerance limits of certain biota; these species will not be among those occupying mined land.

Regarding reversibility, we would like to point out that a Phosphate Council spokesman said at the Bartow Public Hearing on this EIS that wetlands would be easier to restore than virtually any of the other natural systems that are present on land to be mined (see Response to Comment T-46). This, coupled with a phosphate company request (Amax 1978) to consider man's technical and economic ability to restore wetlands before implementing requirements, does not lend credence to claims of restoration of such a spectrum of habitat types. It should be noted that this quote, the above two, and the next quote are from the same paragraph in the text. Two sentences between this quote and the next, however, are omitted. To avoid the inferences possibly fostered by your selection of certain sentences, we would like to insert for the benefit of the reader the missing sentences (DEIS, p. 1.26, 1.27).

> ...nonforested wetlands. Rather than promote some degree of development of natural habitat as has occurred in long-abandoned mining areas, current reclamation regulations and practices produce a landscape of managed systems - primarily improved pasture. As the landscape diversity in the area declines, so does the faunal and floral diversity. Although diversity declines....

W-31

Several of these comments are extraneous to both this quote and its context. We have not correlated habitat quality or community stability with versity nor have we indicated that forested wetlands, sandhills, etc. are climax communities. We have already discussed what is happening in the way of reclamation and what could happen as well as the apparent decline in diversity in the mining area (we did not use "areawide" as did the commentor, although it is not without possibility).

We regret that we are not familiar with what could be sandhills or sand pine scrub habitat on the mined lands you cite and would be interested in documentation of their presence as well as the fact that the particular location was mined. We feel that the cypress stand at the Teneroc site is occupying unmined land that was disturbed by mining activities.

Further comment on the state of the art of reclamation as well as its priorities is unnecessary.

W-32

Data to support this statement are available in the Tampa District Office, Florida DER files.

W-33

The statement extracted from p. 1.32 of the DEIS was part of a more extensive summary of conditions in one of the working papers, which explains why conditions favor the entrance of contaminants into the water table and Upper Floridan aquifers. (Volume V, Section 1/Volume V-NTIS).

W-34

Data on waterbodies of the study area are found in working paper Volume V, Section 2/Volume V-NTIS. The views of the Florida Game and Fresh Water Fish Commission on the poor life-support value of the mine pit lakes have already been stated (see Response to Comment T-44). Wildlife usage of these lakes is discussed in working paper Volume XI, Section 2/Volume VII-NTIS. As indicated in working paper Volume V, Section 2/Volume V-NTIS, Lakes Parker, Banana, Hancock and others in the mining area of Polk County have become degraded and/or eutrophic considerably faster than lakes in the southeastern part of the county. These mining area lakes have little to no sport fishery and contain dense shad and tilapia populations, while Lakes Walk-in-the-Water and Reedy in southeastern Polk County have a viable sport fishery.

The "extremely shallow, periodically dry systems" replaced by mine pit lakes sound more like an incomplete description of a wetland than a natural lake. At any rate, no natural lakes are projected to be replaced, only wetlands and upland habitats.

W-35

These five paragraphs neither add to nor change the impact assessment on the manatee, American alligator, or Suwannee cooter. We must, however, disagree with your prediction of increased alligator populations over the long-term from mining. The mine pit lakes and reclaimed slime ponds of the long-term will not support alligator population's equivalent to those of swamps and marshes now occupying the land to be mined.

The comment on important species iterated in the first paragraph has been addressed (see responses to Comments T-1, T-2, T-42, W-27, and W-28). We do not understand the relationship among the list, aquatic species, and effects of mining you are describing. The list referred to comprises all vertebrates except fish, a category generally recognized as wildlife. It includes aquatic as well as terrestrial species. The number of aquatic and water-oriented species on the list is equal to the number of terrestrial species. Mining poses potential or actual adverse effects on 3 of 13 threatened and endangered species treated in the aquatic biota section and at least 12 of 32 threatened and endangered species treated in the terrestrial biota section. A source of confusion in addressing impact on biota in this and other cases is the requirement of most report formats to treat terrestrial and aquatic biota separately, when indeed numerous species cannot be categorized ecologically as one or the other.

W-36

This sentence is part of the description of the natural environment of the study area - not the mining area. It does not imply, nor does its context imply, that the problem is greater in the mining area.

W-37

Text modified.

W-38

Details supporting Figure 1.15 are given in a working paper Volume VI, Section 4/Volume VI-NTIS.

COMMENTS

FLORIDA PHOSPHATE COUNCIL (Homer Hooks' letter of June 20, 1978)

p. 1.49, Figure 1.15

The ranges are defined as shown. However, the reference to "high" and "low" BPL should be reversed to correspond with correct U_3O_8 equivalents. Low BPL in this case corresponds to 100 ppm or 0.01% U_3O_8, and high BPL corresponds to 200 ppm or 0.02% U_3O_8.

W-39

The reference provided in the text for the dose rates cited is the Florida Department of Health and Rehabilitative Services (1977). This report, apparently a draft, has been superceded by a 1978 publication of the same title, whose values correspond to those cited by Mr. Hooks. The dose rate values will be changed to reflect the 1978 report (which does not include a gonad dose value).

W-40

Text modified.

W-41

Refer to response to comment number W-8.

W-42

Text modified.

W-43

Text modified.

W-44

Text modified.

W-45

Refer to responses to comments T-5 and T-13.

W-46

The referenced statement is correct, i.e. most archeological sites are extremely fragile and would be permanently altered or destroyed if mined.

Most of the comments in the Phosphate Council's letter are adequately covered (working papers, Volume XI/Volume VII-NTIS).

W-47

The referenced table was not intended to indicate whether or not the recreational area was a product of reclamation by the phosphate industry.

Also, the section cited was not the proper place to indicate a positive impact. The positive impact due to reclamation by the phosphate industry is mentioned in this EIS.

W-48

Guidelines established by the Steering and Advisory Committees in effect directed assessment efforts toward existing information with the goal that issues deserving continued investigation and applied research would result. Use of lands subsequent to mining, definitions of options available, and an assessment of the mitigatory value of those options deserve attention, and are presently being investigated by Federal, State and local agencies as well as by environmental groups and the phosphate industry.

W-49

The methodology used to summarize effects is indeed subjective, but not arbitrary. The values assigned to impacts have context within the groundrules of the assessment program and the rationale supporting each value as documented in Volume XI (Volume VII of the NTIS papers) of the working papers which deals with impact assessment of the alternatives.

W-50

Text modified.

W-51

All aspects of the important species list have been covered in prior comments except perhaps one: if the important species are maintained, obviously other species will also be.

W-52

World Phosphate Reserves table has been corrected.

W-53

It is true that some abandoned slime ponds have provided wetlands type habitat. However, this is temporary in nature, unless the abandoned pond is continuously managed to maintain the wetlands vegetation. Filling mined pits with clay and tailings does not preclude possible creation of lakes and/or wetlands type habitat. Phosphate ore removed still leaves a net void in material, precluding return to original contour throughout the mining area.

W-54

The potential for sustaining overburden pressures resulting from the full range of practical uses for reclaimed slime ponds needs to be investigated as an integral part of the on-going reclamation research. The cautious concern expressed in the EIS sustains.

W-55

Text modified.

W-56

Because of continued concern regarding potential groundwater contamination by the highly contaminated gyp ponds, the site-specific studies for new sources must of necessity initiate with the assumption that pond lining is needed to protect groundwater quality. This is no different from existing requirements for other industries which employ ponds containing chemically or radiologically contaminated water. Even if the industry study on these ponds were to show lack of groundwater contamination at the three sites tested, the need would still exist for a basic assumption that pond lining is needed for new sources until hydrogeologic testing proves otherwise.

W-57

The disclaimer is already noted in the text.

W-58

The intention of the calculation was to estimate the magnitude of the storage requirements required by the proposed action, not to design a containment system for a specific site. A more sophisticated computation will be necessary to design each specific system.

W-59

We agree with comment.

W-60

The alternative action in the context from which this quote was taken would have required replacement of wetlands habitat equivalent to that which now supports certain important species. These species are not (nor claimed) restricted to wetlands habitat necessarily but, according to reported occurrences, are most abundant or most frequently present in wetlands.

Further response to the remainder of this comment is unnecessary.

W-61

Farm ponds, reservoirs, other man-made impoundments, ponds, most lakes, and borrow pits are not wetlands by most definitions nor those of this report, most literature cited, and the Florida Department of Natural Resources. See response to Comment T-42 for references to wetlands definitions and descriptions.

The most recent research on wetlands restoration is summarized and documented in working paper Volume XI, Section 2/Volume VII-NTIS. The conclusions of this EIS were based on the state of the art of wetlands restoration and field observations.

Our consistent references to the value of unreclaimed mined habitat and the efficacy of allowing more to develop show little difference in your message and ours. It should be remembered, however, that impact was based on the environment as perceived up to the end of 1977 (including proposed mining and reclamation plans) and not elucidations prompted by the conclusions of this EIS.

Man-made marshy areas likely are more productive for many waterfowl than wetlands, as are mining pits and as would be managed slime ponds if realized. In working paper Volume XI, Section 2/Volume VII-NTIS, a prediction is documented that little impact from mining to those species considered 'important' to Ducks Unlimited is expected. As indicated in the list of species expected to be affected by wetlands loss in this EIS, bitterns, rails, and herons generally are more dependent on wetlands than ducks. None of the ducks of the mining area is a species of special concern as designated by the Florida Committee on Rare and Endangered Plants and Animals, although the referenced wading and shore birds are. The alternate wet/"dry" regime of wetlands is a basic characteristic.

The editorial in Fisheries references a court decision that was based on expert testimony and data presentation. Apparently evidence of man's inability to duplicate existing wetlands conditions outweighed that of opposing views.

W-62

These activities on the part of state and federal agencies are manifestations of your previously expressed (Response to Comment W-14) need for man to manage his environment. Whether all aspects of the management are in the best interest of natural succession is a point to be debated among the parties involved and not within the scope of this EIS. Whatever the end product of the management may be, however, the initial impetus was conservation of a valuable resource, as are most results.

W-63

The economic elements were carefully considered by two professional economists experienced in environmental analysis. Both economists agree that there would be some difference in impact for the various scenarios. However, within the framework of existing economic information, there was no way to quantify these differences within the guidelines for this study. Overall, the economists believe the differences would not be of large significance.

W-64

The bias toward environmental elements is the result of the intent of the National Environmental Policy Act (NEPA) and the expressed concerns of the members of the Steering and Advisory Committees. Whether environmental impacts are balanced by socioeconomic benefits is a subjective and potentially arbitrary judgement. Such judgement is the responsibility of the decision maker and justifies an explanation of rationale in the manner advocated by recently issued regulation of the Council on Environmental Quality for implementing procedural provisions of the NEPA.

W-65

Text modified.

W-66

Text remains the same. Comment indicates the "may" should be changed to "will," but we have not found sufficient evidence, including the Devall paper, to indicate the soils are generally better than or even equal to those existing prior to mining. There are certainly instances whereby poor soil is improved for some uses, but there are also certainly instances whereby soil is degraded with respect to certain uses.

W-67

How closely reclamation will return each mined area to its original contours will depend on the site-specific mining and reclamation plan which will be required for the site-specific EIS and the Florida State DRI. The choice between natural habitat systems and human use will have to be considered when developing the reclamation plans.

W-68 through W-74

All of these comments are iterations of previous ones and have been addressed. The only different aspect is the reference to biological productivity versus diversity. Although not in this EIS, part of the rationale for the conclusions stated herein (working paper Volume XI, Section 2/Volume VII-NTIS) is that: "Were the mined land allowed to naturally revegetate, there might eventually be greater productivity in terms of life support." This was specifically in reference to sandhills and sand pine scrub versus the deciduous forest that possibly could develop on mined land. The statement is not so readily applicable to hammocks or wetlands. The remainder of the thought (same page) is important also: "The argument, however, obscures the uniqueness of the vegetation and associated fauna and the fact that the sclerophyllous plants characterizing this native type (i.e., mixed forest) support a greater variety of wildlife than either natural nonforested habitats or the various agricultural habitats of reclaimed area."

W-75

If native habitat could establish on mined land, there would be no impact associated with its loss. The types of communities that will establish on mined land, as described in the EIS, the Edscorn paper, and your comments, are not those existing. The success of pine plantation (slash pine only - not the premining naturally dominant longleaf pine) is debatable (see working paper Volume XI, Section 2/Volume VII-NTIS). Importantly, pine plantation does not approach the biological productivity of pine flatwoods. The dependence of mixed forest on moisture conditions is not unlike that of any other forest type. Moisture conditions, of course, are partly determined by the soil type.

W-76

This EIS does state that pine flatwoods comprises the greatest amount of remaining forests - and the important word in the sentence is "remaining": 170,000 out of nearly 3 million acres is not much. Secondly, its status as the predominant forest in Florida also is important since the forest that possibly will replace it and other native forests on mined land is most similar to the more expansive eastern deciduous forest. The paucity of remaining extent of both the pine forests and deciduous forests in eastern United States is of concern of course, but the desirability of deciduous forests replacing native Florida forests is debatable. This point is expressed in our effects assessment and was brought up by a Florida Audubon Society spokesman at the Bartow Public Hearing (Transcript, p. 74-75).

The "mesic hammock" at the Christina site apparently is different from the native hammock since you earlier state (see response to Comment W-31) that it would not be vegetationally distinguished by most experienced naturalists as other than a natural hammock and Edscorn calls it a hammock situation. A description of native hammocks is given in working paper Volume VI, Section 5/Volume VI-NTIS.

W-77 through W-81

These comments have been addressed previously. As additional support for our conclusions, we would like once again to point out the statement made by a Phosphate Council spokesman at the Bartow Public Hearing for this EIS that indicates the difficulty in establishing any native habitat on mined land. This statement directly contradicts claims of presence of true hammocks and other native habitat on mined land as well as the imminency of their presence via man-directed activities.

W-82

We regret that apparently the commentor misunderstood the context of this quote. As we stated in the same paragraph, "mining and subsequent reclamation are producing a uniform habitat." Comparisons were then made between the primarily agricultural habitats of reclamation and those of natural systems. As of the date of this EIS, there is no evidence of the desire or intent of any significant amount of natural system development on mined lands (see response to Comment W-29).

W-83

The present fragmented system, as indicated by the quote and its context, contains optimal habitat for these species; it is limited and further fragmentation will indeed reduce carrying capacity for both species. We have already stated that wildlife carrying capacity generally is enhanced by the juxtaposition of habitat types. Further comment on the fact that reclamation is producing a uniform habitat is unnecessary.

W-84

The likelihood of the threatened and endangered species being affected by mining is more likely than restoration of native habitat being effected and other "enormous potential" being realized. Technology and economics do not indicate the latter will occur.

Omission of the table has been addressed and it has been inserted. Reference also has been made to additional comments on threatened and endangered species: working paper Volume XI: pp. 2.41 - 2.47. See response to Comment W-35 on aquatic threatened and endangered species and the context in which all threatened and endangered species are treated.

There is another point of agreement besides that of impact to the Osprey and Caracara. To quote from the same paragraph: "...the Least Tern and Peregrine Falcon, both primarily coastal species, may be attracted to the mining areas." As indicated, this is considered an outside possibility for the rare falcon. We have no evidence that would indicate a change in the evaluation of impact to the threatened and endangered species.

W-85

It is doubtful that improved pasture is similar to the relatively young successional habitat of study area game management lands such as the C. W. Webb and Avon Park Wildlife Areas. Apparently the only impact assessment you really disagree with concerns the Bobwhite. This species is most successfully managed in field-forest edge, which is more scarce on reclaimed lands than on existing ones.

W-86

This quote does not say that certain species will be eliminated from the area. Please see working paper Volume XI, Section 2/Volume VII-NTIS for a more complete discussion of the effects of mining on recreational and commercial species, including the opinion of certain Florida game management authorities that landuse changes generally determine what species comprise the game list and that Florida's game list has dwindled because of habitat loss and may continue to do so.

W-87

As indicated previously (see Responses to comments T-1 and T-2), our assessment of impact to these species in general is supported by the findings of the Archbold Station and the Florida Game and Freshwater Fish Department. We regret that your review of this statement apparently did not include the effects assessment (working paper Volume XI/Volume VII-NTIS), but we invite your attention to Section 2 of that document.

The Florida Committee on Rare and Endangered Plants and Animals has reviewed the status of most vertebrate species in Florida and is continuing review of plants and invertebrates. The result is an extensive list and treatment of species other than those recognized as threatened and endangered by either the FGFWFC or DOI. The significance of these species as assessed by FCREPA, as well as the FWS through the Archbold Biological Station Report, indicates that consideration of the species should be a part of future development activities in Florida.

W-88

Information on nuisance and pest species of the study area is in working paper Volume VI, Section 5/Volume VI-NTIS and working paper Volume XI, Section 2/

Volume VII-NTIS. Our assessment of mining and reclamation increasing the potential of several species to reach pest proportions remains as does the prediction that the populations will be controlled as "successfully" as ever (working paper Volume XI, Section 2/Volume VII-NTIS). Control methods generally impact other biota. We repeat, as before, that some of the impacts of mining are no different from those of other development. We repeat also that mining is projected to cause most of the cultural alteration in the inland study area between now and 2000.

W-89

Text modified.

W-90

This is in reference to the EPA report on radium-226 in ground water (EPA/520-6-77-010). There have been field observations (by the State of Florida and SWFWMD) of slime and gyp ponds failure by sinkhole collapse. Water budget studies show there is known seepage or loss of water from slime ponds (Zellars and Williams, Inc., 1977). Although the evidence may not be complete, indications of contamination do exist and, therefore, need to be addressed. To our knowledge, definitive studies in support of a contention of no ground water contamination due to phosphate industry activities do not exist.

W-91

As stated in response to Comment , EPA effluent discharge standards are not sufficient to protect water quality in the Tampa Bay and Peace Basins.

W-92

Surface water in West Central Florida tends to exceed recommended concentrations of plant nutrient material to prevent overenrichment whenever the water is impounded, whether or not the water has been affected by phosphate operations.

W-93

See response to Comment W-56.

W-94

Text Modified

W-95

See response to Comment W-35.

W-96

The conclusion of the paragraph containing the quote is: Although the immediate effects of (a slime) spill are severe, the impact is reversible because stream ecosystems generally recover in 2 to 5 years (based on the spill's magnitude). The implication that we assigned a significant magnitude of impact to aquatic threatened and endangered species is not founded.

W-97

Recovery of a disturbed wetland is not in question; restoration of wetland destroyed by mining is.

W-98 and W-99

The proposed action recommends several alterations to current mining and reclamation policies. The mine pit lake systems, including their value as habitat, their unavoidable existence, and their expected viability are addressed above (see responses to Comments T-40, T-41, T-44, T-46, and T-47).

W-100

The truth of the first paragraph in this comment appears to have no relevance to our impact discussion. Concerning the next paragraph, we regret any inferences that wet areas are wetlands; we consider the statements relative to impact on nuisance and pest species as not at all contrary to those pertaining to the importance and value of wetlands.

W-101

Standing water as defined in the paragraph above the one comprising this quote includes lakes.

W-102

Economic data on commercial fishing as well as observations of the FGFWFC support this prediction (see Volume V, Section 2/Volume V-NTIS).

W-103

Magnitude of community alteration will be a function of extent and kind of nearby watershed disruption. Without a knowledge of details of a proposed action in a given area as well as some good baseline and applicable historical data, it would be a rather meaningless exercise to apply quantitative predictions. The qualitative description of potential effects provided in the text is adequate for impact assessment purposes.

W-104

This statement is somewhat misleading in that it was not intended to contrast resource value of standing versus flowing water communities within the study area, but rather, to indicate that reduction of flow in stream habitats results in undesirable community changes and concomitant reduction in resource value. (It should be pointed out, however, that when contrasting resource value of standing versus flowing water communities within the study area, all evidence indicates a greater resource value for flowing water communities; the values of each are discussed in the Aquatic Biota working paper (Volume V, Section 2/Volume V-NTIS). The statement will be clarified by the following rewording: This will represent an adverse effect, since shifts to lentic community characteristics in a stream habitat are undesirable and result in loss of resource value.

W-105 and W-106

The document does not state, or imply, that the phosphate industry has precluded growth of a tourist/retirement economy in Polk, Hardee, and DeSoto. Quite the contrary, the tourist/retirement industry has been growing in Polk County especially, and as pointed out, "service businesses catering to the needs of the retirement and tourist sectors are in direct conflict with the phosphate industry" (for workers, goods and services). In other words, both compete for goods, services and workers to satisfy their needs.

W-107

Text modified.

W-108

Trade in phosphates is quite sensitive to transport costs. Consequently, firms are able to export significantly if they are favorably situated with respect to low cost water transportation routes. This requirement is met by phosphate production regions in Florida. Clearly, Tampa Harbor is being developed as a deep draft, bulk-cargo port. The only significant bulk cargoes are petroleum and phosphate. Of the two, according to Corps of Engineer statistics, phosphate export predominates (i.e. shipment of phosphate rock and development of Tampa Harbor [for bulk cargo] are synergistic or mutually cooperative.)

W-109

The collapse of Karst structures was discussed as a potential impact only because gypsum stacks and some waste clay storage will be above grade, thus increasing the load on below-grade structures and presenting the possibility of collapse.

W-110

Available aerial photography of the study area as well as generalized vegetation cover maps are either of inappropriate scale or accuracy for use in showing such fragmented habitats as sandhills and sand pine scrub and naturally isolated hammocks. This was pointed out earlier (see response to Comment W-17 and working paper Volume XI, Section 2/Volume VII-NTIS). The alteration by mining of any extent of these endangered habitats is of significance. That 30% of the study area's mixed forest habitat (sandhills and sand pine scrub) will be altered by mining is most significant; no other habitat type will be altered to that extent. These observations portend a greater perturbation on these habitats than indicated in this EIS.

W-111

Text modified.

W-112

Further comment on the value of mine pit lakes is unnecessary.

That you recognize this as "one of the few" references to the value of abandonment versus reclamation is contradictory to numerous previous comments in which complete unawareness is implied or stated. Much of the redundancy in your total statement could have been avoided by regarding the impact to terrestrial biota in its proper context rather than pulling out certain sentences. Reasons for the choice of improved pasture and similar habitat on reclaimed land, stated often in working paper Volume XI, although not denied in your statement, are ignored. Especially noticeable is the fact that its projections as a land use are not questioned.

W-113

The word "inland" was omitted from the sentence. The sentence has been corrected to read "...change in inland land use...." Mining is not expected to change significantly Coastal Lowlands biota.

W-114

None of the statements in this EIS on improved soil conditions pertain to terrestrial/wetlands biota. The statements refer, and possibly correctly, to the improved soil condition for crop and pasture production. Habitats of the foreseeable future, either reclaimed or natural, on mined land are not expected to exhibit either life-support value of existing wetlands or diversity comparable to that of the present mix. As stated, diversity is expected to decline primarily from loss of swamp hardwoods and mixed forest - neither of which is expected to develop on mined land. This is a comparison of expected versus existing habitat types. The foreseeable future encompasses maturation time. Regardless, a comparison between existing systems and the systems expected from reclamation, which is the context of this particular quote, is certainly valid in assessing impact of mining activities.

W-115

This comment merely points out inadequacies in the data base, which have already been acknowledged. In all probability, and appropriately, data on threatened and endangered species distribution will come from site-specific EIS's.

As stated in working paper Volume VI, Section 5, the data included in the description of the study area's threatened and endangered species was derived mostly from FCREPA's Inventory of Rare and Endangered Biota of Florida. The FWS report was issued much later than was Volume VI, Section 5/Volume VI-NTIS. Importantly, the FWS report was available prior to evaluating impact on the species. We see little need to revise the general range maps since the species likely to be affected have been identified and their distributions in specific locales can be ascertained and mapped during site-specific studies.

W-116

Regional carrying capacity, as defined in the sentence, pertains not only to biologic carrying capacity but also economic, social, hydrologic, etc.

In this extension of the concept, activities may indeed be limited by the factors determining the carrying capacity. One of the factors that may be used to determine regional (or other unit) carrying capacity is the proportion of intensely managed biologic systems to essentially natural or moderately modified systems. Since the concept cannot be applied areawide to all resources, the reference has been deleted. The sentence pertaining to the increase in managed versus natural systems stands.

W-117

The statement on p. 2.45 (DEIS) is: most of the affected ecologically significant species "...are closely associated with various little-modified habitats, including wetlands and natural ponds and lakes that have gently sloped sides...." Besides the fact that wetlands include forests, which in this case are most important, upland forests also are among the "various little-modified habitats." Loss of forests identifies the greatest impact; this does not imply that loss of other habitat does not have impact.

W-118

The context of the referred material (from page 2.44 and 2.45 of the DEIS) is the 1985 and 2000 environment of the study area with presently permitted mining only. It is a statement of the effects of mining, including proliferation of pests, etc. Impact is judged on alternatives to this "no action" state. The context of p. 2.74 (of the DEIS) is existing mining plus all pending permit mining. Although the effects described in this EIS, and more fully in working paper Volume XI, Section 2/Volume VII-NTIS, are expected to be enlarged by additional mining, impact was judged to be minimal because both categories of species are intensely managed, i.e., essentially controlled. Similar management is not true of biota in general nor of threatened and endangered species and ecologically significant species in general.

The context of the paragraph on p. 2.74 of the DEIS is important as well. Reference is made to the fact that land use change expected from mining will contribute to the increased costs of future management of these species; further, it is implied that could the increased costs attributable to mining be discerned, and were they substantial, then impact would be greater than minimal. The costs are not all monetary; they include, for example, the impact of increased pesticide usage.

W-119

Text modified.

W-120

Text modified.

W-121

The word, "catastrophic," was chosen to indicate a "worst-case" situation, i.e., a -10 impact. The loss of archeologic sites unquestionably represents a worst case situation for that site. Even though the artifacts may be recovered, as was mentioned in mitigation, the site itself is lost.

W-122

Refer to response to comment W-63

W-123

Text modified.

W-124

Text modified.

W-125

Text modified.

W-126

The dam height associated with the proposed process modification was obtained from a description of the sand-clay waste disposal method by Timberlake (Volume XI, Section 4/Volume VII-NTIS). The risk of collapse will always exist unless it can be guaranteed that no slime storage will take place over carst structures, even though history has shown the risk to be slight.

W-127

Restoration to original topographic surface was not stated to be an overriding consideration. If it were, there would be a reduction, if not elimination, of phosphate strip mining.

W-128

Text modified. EPA sampling has shown significant exposure levels as far as 400 meters from a controlled dryer stack.

W-129

Text modified.

W-130

Text modified.

W-131

There have indeed been vegetation changes in the South Prong of the Alafia River (Burgess, 1966, State Board of Health, Report on Biological, Physical, and Chemical Conditions of the Alafia River). There have probably been no further adverse changes since 1966, because water quality in the South Prong has improved since that time.

W-132

Reserves under Category I wetlands should be considered resources as long as mining is precluded. If in the future, due to changing technology in wetlands restoration, and/or dire national need, mining is allowed in Category I wetlands, the resource may again become reserves. In any event, preclusion of mining does not destroy the resource. It may, however, cause mining to be more costly at any given time in the future.

Determination of reserves lost to wetlands preservation will have to be made in site-specific studies.

W-133

Even with all the variables mentioned in this comment, a net void is still to be expected.

W-134

After weighing all positive and negative effects of slime ponds, including potentially catastrophic negative effects, elimination still has a greater positive than negative impact.

W-135

Collapse of underlying strata occurred at the CF Industries, Inc., Mulberry, Florida, gyp pond in April, 1975. An estimated 90,000 cubic yards of gypsum and 4.5 million gallons of contaminated pond water entered the aquifer.

W-136

Text modified.

W-137

Several responses on the apparent differences in our concepts of wetlands appear above; the value of wetlands to waterfowl is discussed in Response to Comment W-61; and the state of the art of reclamation is discussed in several above responses.

W-138

Refer to responses to Comments T-55 and W-56.

W-139

Changes are not too insignificant to measure, and text has been modified to reflect this. See EPA report entitled "Population Radiation Dose Estimates from Phosphate Industry Air Particulate Emissions," Partridge, et al.

W-140

See response to comment W-132.

W-141

We can see no reason to exclude listing Federal requirements for strip mining of coal, which is similar in many respects to strip mining of phosphate.

W-142

This comment does not explain why spills, which enter and harm receiving water quality, occur quite frequently. (Tampa DER files)

W-143

We agree with the comment, though extraneous to the topic of soil types. Also, agricultural activities are limited to the extent that the land is too unstable to support heavy agricultural emplements.

W-144

This statement does indeed imply other than the intended message that current mining and reclamation practices are producing managed systems. It has been deleted.

W-145

Text modified.

W-146

The wording in the EIS has been changed to be consistent with this comment.

W-147

Reference to the difficulty in discerning true palmetto prairie from palmetto growth (both lumped as rangeland) using existing vegetation maps is in working paper Volume XI, Section 2/Volume VII-NTIS. From known distribution of the type, we have indicated that it may exist on land proposed to be mined in the southernmost portion of Manatee County. We agree that only field analysis or perhaps small scale photography will identify the type.

W-148

The area's development progress, other than with respect to phosphate mining activities (Volumes V and VII-NTIS, respectively) is acknowledged in Volume IV (Current Land Use), and Volume XI.

The need for additional improved pasture is questionable, at best. Arguments against additional improved pasture are presented in Volume XI, p.3.47. It must be kept in mind that reclamation will result in a net loss of land.

W-149

We are unaware of studies showing additions of phosphorus from stream discharges to have no additional effect on Tampa Bay. To the contrary, phosphorus and other plant nutrient materials introduced into Tampa Bay by various activities of man have been shown to be quite harmful to water quality in the bay system. EPA will not adhere to a policy which would allow additions of a harmful material because the body of water has already been degraded below the point where additional materials can do no further harm. Instead, we strive to remove the harmful materials being introduced while at the same time preventing new discharges of the material. This is why the City of Punta Gorda is planning to land spread treated sewage, and the City of Tampa is spending $90 million on advanced waste treatment, which will remove nitrogen and phosphorus from its discharges. It is also the reason chemical phosphate plants in the Tampa Bay Basin reduced daily discharges of phosphorus from 80,000 pounds per day in 1969 to less than 5,000 pounds per day in 1972, at a considerable cost. Let us not reverse these advances made in the past few years with a philosophy based on allowing further degradation simply because a body of water is already degraded.

W-150

If the change is 53 mgd and 21 mgd is associated with phosphate industry usage, the phosphate industry is a major factor in the projected change, accounting for about 40 per cent of it.

W-151

The 1500 gallon per ton figure was based on a survey of phosphate industry users carried out by the EPA for this study, and was an average of the usage rates reported. Details of the water demands in the study area are shown in a working paper (Volume V, Section 2/Volume V-NTIS).

W-152

We believe this estimate of cost per acre for reclamation with the "Brewster" (or a similar) method is quite high. Also, this estimate of the value of agricultural land in Central Florida is certainly low. One must also consider the cost of constructing, operating, and reclaiming slime ponds if conventional slime settling ponds were utilized. This cost approaches the cost of alternative methods of slimes utilization. With pre-thickening as necessary, one of the alternative uses is feasible at all Central Florida mines.

W-153

The dry conveyor is not part of the recommended scenario nor proposed action.

W-154

The Proposed Action will require above ground water storage, though not containment of 10-year nor 25-year storms at mines. This amount of storage was deemed infeasible. Instead, the Proposed Action requires storage to allow capture and reuse of water otherwise tied up in slime ponds; and a re-use factor approaching 100 percent on an annual average basis. Amount of storage is to be determined in site-specific studies. The advantage of water conservation resulting from above ground storage outweighs disadvantages mentioned in the EIS and in this comment. The writer may have confused disadvantages spelled out for above ground slime disposal with above ground fresh water reservoirs.

W-155

This is a correct statement. However, this EIS concludes that Category I Wetlands are to be mapped in site-specific studies, and protected. Section 404 Permits are to be issued for Category II Wetlands, but after plans are developed for restoration.

W-156

Refer to numerous responses above for wetlands definitions and other information on wetlands, as well as reference to the need for further development of criteria for judging their relative value.

W-157

Refer to working paper Volume XI, Section 2/Volume VII-NTIS for information on criteria used in judging wildlife habitat types. Working paper Volume VI, Section 5/Volume VI-NTIS contains reported vertebrate (except fish)/habitat type presence and abundance.

We agree that all things being equal, there is no need to rank habitat. All things were not equal in this impact analysis, however, since, among other factors, all habitat cannot be restored on mined land. Similar loss of habitat occurs with other development. The ranking of habitat to achieve recognition, if not conservation, of productive or diverse or endangered habitat is not unrealistic and rarely controversial except as to the order of rank.

W-158

The combination of slime ponds, improved pastures, and mine pit lakes of most reclaimed mined land does not approach the previous landscape diversity. The value of slime ponds in this context, however, is recognized and was discussed more fully in working paper Volume XI/Volume VII-NTIS (Refer to response to Comment T-36). The statement in the EIS that neither fairly immediate use of abandoned slime ponds for improved pasture (flocculation method of restoration) nor the more immediate availability (within 2 years with sand tailings method) for similar purposes is preferable from the standpoint of wildlife production is a strong endorsement for slime ponds. The decision to eliminate them was made despite their temporary wildlife value.

W-159

Refer to responses to Comments T-14, T-42, W-28, and W-61.

W-160

The conditions of the proposed action indicate that the effects assessment made decision makers aware of the potential impact to the area's biota. Elaborations will be made on these impacts along with appropriate mitigation in the site-specific EIS's.

W-161

Volume I of Final EIS should satisfy this comment.

W-162

Refer to responses to these referenced comments.

W-163

Additional original data is always desirable in any study of this nature. However, we believe data is sufficient to support basic conclusions of the study. Additional data will be necessary for each site-specific EIS. Responses are made elsewhere to each of the examples (3a through 3f).

W-164

The production figures and projections of phosphate rock demands versus domestic supplies are estimates made by the Bureau of Mines and are updated annually. The latest projections are available from them. They show that there is time to formulate a policy on exporting phosphate rock. That type of policy is not within the charter of the EPA to recommend, however, the EIS is the medium by which EPA is communicating the resource projection "information to Federal, State and local agencies as well as to the public."

W-165

The EIS does not determine quantity of fossil fuel utilized for shipping phosphate rock. See response to Comment T-4.

W-166

The statement refers to relieving public anxieties about the adverse effects of phosphate mining. The author of this comment lifted out of context this important "charge" to industry, government and to the general public to be informed and pursue with diligence the resolution of all issues involved (research, drafting of regulations, monitoring, planning and operation).

W-167

Refer to response to Comment T-4.

W-168

Refer to response to Comment T-4.

W-169

Refer to response W-63.

W-170

Conclusions of the Final EIS are as stated in Volume I. Rationale is given in these responses, in Volumes I and II, and in the revised Working Papers.

W-171

Category I Wetlands, for which mining is precluded, is adequately defined on an areawide basis. These areas will be mapped in the site-specific studies.

W-172

Refer to responses agreeing with need for an increased monitoring and enforcement program.

W-173

The National Wetlands Inventory Office has been consulted, and has assisted. Current mapping by this office will assist greatly in determination of Category I, II, and III Wetlands in site-specific studies.

W-174

Available reports and observations of threatened and endangered species on or using land to be mined should be addressed in site-specific EIS's. Known occurrence as of the end of 1977 was reported in working paper Volume XI, Section 2/ Volume VII-NTIS.

W-175

The FWS Report generated by Archbold Biological Station was discussed in Comments T-1 and T-2. As indicated, its conclusions were reviewed prior to publication of this EIS in draft form and many, though not all, corroborate the conclusions of this EIS. The report, though an aid to the EPA's Central Florida Phosphate Industry Areawide Effects Assessemnt, is not included as a distinct document.

W-176

Responses to the Florida Audubon Society letter are provided in responses to oral comments T-25 through T-28.

W-177

Because these are 'important' species for which suitable habitat must be considered as part of mining and reclamation plans (via the proposed action), the site-specific EIS's will provide information on their occurrence as well as measures to mitigate impact to them. None of the mining area has been designated by the DOI 'critical habitat' of a threatened or endangered species and thus is not legally protected for their use.

W-178

Current State requirements should assure that reclamation is equal to or greater than the rate of mining.

W-179

See responses to Comments W-265 and T-26.

W-180

This comment is addressed in text of Volumes I and II, FEIS, and in responses to other comments.

W-181

This is a correct understanding. Site-Specific EIS's will be distributed for review.

W-182

Much of this information will be provided in site-specific studies. See Working Paper Volume III/NTIS Volume III for area wide effects.

W-183

Text of Volumes I and II modified, based on these comments regarding effects and mitigation of effects on archaeological and historic sites.

W-184

This paragraph will be included in requirements for site-specific EIS's. Consultants will be advised to contact the Florida Division of Archives, History and Records Management during the Plan of Study state of each site-specific EIS.

W-185

Energy is considered, but we agree that this was not an overriding consideration in evaluation of scenarios. We believe increased emphasis on energy utilization would have led to the same conclusions.

W-186

A comparison is not needed for rock processed in Central Florida. Drying obviously requires more energy than transporting approximately eight percent excess moisture. Proposed Action does require energy comparison on rock shipped outside the State.

W-187

Agree.

W-188

Agree - see response to Comment T-8.

W-189

The USGS is not willing to publish the model results which includes other municipal and industrial uses as of publication of the FEIS. EPA does not intend to develop guidelines for water withdrawals for phosphate mines in Central Florida. This is a State responsibility.

W-190

This method has been shown to be ineffective in instances where top soil consists of highly porous soil such as exists in many areas in Central Florida. Radon gas emanation is not impeded sufficiently to allow decay. However, site-specific studies will determine if this method is applicable in any given area.

W-191

See responses to comments T-5 (Point #20) and T-42.

W-192

It was within the purpose of this EIS to point out the perceived deficiencies in the lake systems created by mining but not within the scope to investigate and formulate alternative designs. Among the comments received in response to the DEIS was one from the Florida Chapter of the Wildlife Society indicating that offers to assist the Florida Department of Natural Resources in formulating restoration designs have met with no success. Contact with Nicholas Holler, President, Florida Chapter of the Wildlife Society may be beneficial. (We do not have an address or telephone number.) Additionally, the Lakeland Office of the Florida Game and Freshwater Fish Commission may have suggestions. Mr. Charles Lee of the Florida Audubon Society may also be of assistance.

W-193

We agree with this comment, and believe the Proposed Action to be in accordance with it.

W-194

It is believed that the proposed action does mitigate the impacts listed, in the context of the following definition of mitigation from the proposed regulations for implementing procedural provisions of the NEPA (FR, 43:112 - Friday, June 9, 1978 - Part II):

> "'mitigation' includes: (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
> (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
> (c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
> (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
> (e) Compensating for the impact by replacing or providing substitute resources or environments."

W-195

The NEPA is not applicable to Existing Source NPDES Permits.

W-196

See response to Comment W-144.

W-197

Little is documented about the effects of nearby or/adjacent mining on preserved wetlands. It is anticipated via the proposed action that future formulating restoration designs have met with no success. Contact with Nicholas Holler, President, Florida Chapter of the Wildlife Society may be beneficial. (We do not have an address or telephone number.) Additionally, the Lakeland Office of the Florida Game and Freshwater Fish Commission may have suggestions. Mr. Charles Lee of the Florida Audubon Society may also be of assistance.

W-193

We agree with this comment, and believe the Proposed Action to be in accordance with it.

W-194

It is believed that the proposed action does mitigate the impacts listed, in the context of the following definition of mitigation from the proposed regulations for implementing procedural provisions of the NEPA (FR, 43:112 - Friday, June 9, 1978 - Part II):

> "'mitigation' includes: (a) Avoiding the impact altogether by not taking a certain action or parts of an action.
> (b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
> (c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
> (d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
> (e) Compensating for the impact by replacing or providing substitute resources or environments."

W-195

The NEPA is not applicable to Existing Source NPDES Permits.

W-196

See response to Comment W-144.

W-197

Little is documented about the effects of nearby or/adjacent mining on preserved wetlands. It is anticipated via the proposed action that future descriptions of mining effects on the water table will include effects on preserved wetlands. Site-specific studies will determine the need to protect preserved wetlands from operations on adjacent areas. See response to Comment T-27.

W-198

Refer to response to Comment W-195.

W-199

The Proposed Action minimizes consumptive use of water by the industry. Projected Phosphate Industry use continues to decline through the year 2000.

W-200

Specific effects on the Myakka River System will be addressed in site-specific EIS's. We have indicated potential effects from alteration of flow regime, increased pressure from wildlife displaced from mining areas, etc., and anticipate that the magnitude of these effects will be addressed in the context of each mining site.

W-201

See response to Comment T-4.

W-202

Under the guidelines set by the Steering and Advisory Committees it was decided that future mining projections would be on the basis of consistency with production projections made by the Bureau of Mines. If the reader adds the cumulative production of all mines presently in operations, those in permit processing and those projected by individual phosphate companies, you will determine that figure is far in excess of the Bureau of Mines projections. The key to resolving "whose view is correct" is the analysis of the relationship of the site-specific State and Federally required environmental planning studies to this areawide impact statement and how that information is used in decision making.

W-203

Text modified.

W-204

Text modified.

W-205

See response to Comment W-195.

W-206

See response to Comment T-4.

W-207

Text modified.

W-208

The author of this comment is correct in stating that the four listed issues were not focal points in the design of the alternative scenario investigated. However, those issues were not justifications for the proposed action. Indeed, as the commentor points out, they represent short-term uses of man's physical environment which must be (and were) considered versus long-term productivity of the physical environment by the decision makers. The concerns expressed by the commentator are valid ones, but deal more with the socioeconomic systems than the physical environment - the latter being the focus for this section of the EIS.

W-209

We share your disappointment as to the lack of biological data which were presented for the fresh water aquatic systems of the study area. We did, however, include all readily available data and made an effort to obtain certain unpublished data. During the preparation of the working paper on aquatic biology, for instance, we solicited the Florida DER data on Horse Creek, the Myakka River, and a station on Peace River, but received no response after two requests. Although these data would have been helpful in providing a more thorough coverage, they do not substantially alter the basic characterizations presented in the text. The data submitted are included in the FEIS.

W-210

We have reviewed the Florida DER Peace River periphyton and benthos data. We feel the data hardly qualify as extensive, although perhaps adequate for state water quality monitoring purposes. As stated above, we did attempt to obtain other pertinent data from the DER.

The message of the last sentence in your comment is unclear; however: all benthic forms are dependent upon dissolved oxygen, and those dependent upon high concentrations can be collected in the same manner as those requiring less; adult aquatic beetles and bugs use oxygen from air obtained at the water's surface, and most are surface dwellers or free swimmers rather than bottom or near bottom dwellers as are benthic forms.

W-211

Again, this information would have been helpful during preparation of the working paper describing the aquatic systems of the study area. The record of psychomyiid Genus A (= Nyctiophylax) from the Lower Peace River Basin, as cited in the aquatic biota, working paper, is believed valid; it is based on a collection of larvae and pupae from the Peace River in the vicinity of the DeSoto-Hardee county line during March, 1976.

W-212

This information on Horse Creek should be of value in the preparation of site-specific EIS's. We did not, however, discuss the creek in the aquatic biota working paper and made no reference to its flow regime. That the richness of Horse Creek fauna (as opposed, for instance, to that of the Peace River) reflects the more natural or pristine conditions of an undisturbed stream may be so; however, the taxa list for Horse Creek is based upon nearly twice the number of samples as that for the Peace River, and most likely, a similar effort in the Peace River could easily accrue at least the 17 additional taxa needed to make the Peace River list equivalent. Although there have been some catastrophic pollution events in the Peace River (some of which have resulted in the permanent loss of certain taxa), significant recovery seems to occur within several years, and, based upon historical descriptions of the river, there is no evidence of permanent loss of natural habitat diversity.

W-213

See responses to comments W-209 and W-211.

W-214

Taxa lists were developed from existing data in available literature. A certain degree of misidentification is inherent in most studies similar to those cited. Classifications, of course, differ and are subject to continuous interpretation. It was not within the scope of this study to organize the taxa into any particular classification, and mostly those names reported in the literature were used. Reference to the literature generally will reveal the classification used in a particular study. We regret typographical errors, but find both typos and misspellings essentially unavoidable (e.g., 'occures', 'lieklyhood' and 'undoubtably' in your comments).

Crepidula was listed, along with other gastropods and macroinvertebrates, as occurring within a major river basin of the study area. Thus, the Peace River basin list consists of taxa from the Peace River main stem and streams and tributaries within the basin. It is not uncommon to collect marine or estuarine organisms in the freshwater portions of rivers immediately upstream of the fresh/saltwater interface. Blue crabs have been found as far upstream as Gardner, and barnacle larvae are common in zooplankton samples taken near Hwy. 761 bridge and Shell Point. Crepidula has been collected in both August and October in the vicinity of Shell Point in the Lower Peach River.

As indicated above, the comment on Neocloeon is more of academic interest than pertinent to biotic characterization since nomenclatural changes occur almost daily. The organization of taxa into a particular classification would have been a herculean task of only minute relevance to the real purpose of this study. We regret incorrect records, misidentifications, etc. but, again, we feel the incidence of such errors is low and not sufficient to affect the characterization presented.

W-215

These comments elicit responses similar to those above. We would, however, like to emphasize the essentially subjective nature of higher taxonomic categories by pointing out the use of Neuroptera to include the Megaloptera in several sources, including the widely used Introduction to the Study of Insects by Borror, DeLong, and Triplehorn (1976). The use of Megaloptera to separate alderflies, fishflies, and dobsonflies from similar species at the ordinal level is a matter of interpretation and the term 'outdated' is not applicable. As far as nomenclature at the ordinal level is concerned, some would take issue with your use of Hemiptera instead of Heteroptera.

W-216

Refer to response to Comment 194.

The modeling was deliberately designed to isolate the changes due to the phosphate industry. Further reductions in the groundwater head will result from increased water pumpage by other users. As these data are developed, they will be included in the simulation and analyses of the Floridan aquifer by use of the USGS digital model.

W-217

We believe projections were made as far into the future as possible to maintain the level of precision needed to support the types of conclusions necessary in an areawide or generic study. The Areawide EIS should be updated periodically to reflect changing estimates of reserves and resources, as well as changing technology.

W-218

The economic impacts of resource depletion have been addressed. See FEIS, Volume I, and Working Papers Volume III/NTIS Volume III.

W-219

Modeling approaches are applicable to organic pollutants, but not to inorganic pollutants encountered with the phosphate industry. An assessment and description of effects of these inorganic materials is made in this EIS. Conclusions regarding need for reduced discharges of plant nutrient materials (Volume I), are based on this assessment.

W-220

Non-point discharges not related to phosphate operations are addressed in the three Section 208 Water Quality Management Plans in the Study Area. For both mining and chemical processing operations, runoff from areas affected or disturbed are routed through settling areas and thence to permitted point source discharge locations.

W-221

The further treatment of air quality data in the study area to determine the relationship between phosphate industry air pollutants and atmospheric temperature inversions would require data from continuous rather than 24-hr. monitors in the effected areas, and/or detailed computer modeling. Continuous monitoring data were only available to a limited extent at the time data was collected for this study, and not in the area most affected by phosphate industry emissions. The modeling that was reviewed for this study was concerned with annual average values of pollutant concentrations, and not directly related to the effect of diurnal inversions. Detailed short-term modeling of the existing and proposed emission sources was beyond the scope of this study. Any new air emission sources will be required to look in detail at the effect of such inversions on the air quality in the area around them as part of new source permitting requirements, and the Clean Air Act Amendments of 1977.

W-222

The data reviewed in preparing this EIS did not provide enough information to identify all of the existing sinkholes in the area, much less identify specific locations at which sinkholes could be expected to develop. The identification of existing karst structures that have not yet developed into sinkholes would be very difficult to do even with an extensive seismic survey, due to the high surface water table which tends to flood voids in subterranean structures and thus reducing the contrast necessary to identify changes in subterranean structures from seismic data. Also refer to Volume VI (Volume VI-NTIS) of the working papers.

W-223

The study of airborne fluorides will require more and better ambient concentration data to warrant a more extensive analysis (working paper Volume VII, Section 2/Volume III-NTIS).

Vegetative fluorides appear to be inversely related to rainfall frequency, as stated in a working paper (Volume VII, Section 2/Volume III-NTIS), not on the total rainfall during the year.

W-224

Implementation of the Proposed Action at the Federal level will be through site-specific Environmental Impact Statements, New Source NPDES Permitting, and Section 404 Permitting. A discussion of the relationship between the Areawide and site-specific studies is provided in Volume I, Section 2A, FEIS.

W-225

This is an appropriate comment. We hope the Final EIS language provides sufficient flexibility to allow for changing technologies as well as development of new information. This is certainly a reason for requiring site-specific EIS's, using the Areawide EIS as a baseline. Departures from the baseline can be made whenever departures are justified based on technology, new information, or improved environmental, economic, or social effects.

W-226

Refer to response to Comment Number 216.

W-227

Refer to response to Comment number W-63.

W-228

Local and cumulative impacts are also considered. Working Papers, Volume I/NTIS Volume I.

W-229

See response to Comment W-224.

W-230

See response to Comment W-220.

W-231

Pond emissions were discussed in a working paper (Volume VII, Section 2/Volume III-NTIS). The TRC report, by no means in itself a definitive study of pond emissions, only tended to support the emission estimates shown in the working paper.

See Section in Volume I on Research Needs.

W-232

The EIS does not state that "release of nutrients will be beneficial;" it states simply that the outstanding productivity of Tampa Bay and Charlotte Harbor can be attributed largely to significant contributions of inorganic nutrients by the major contributing streams. It is true that estuaries of the study are apparently not phosphorus limited at this time because of high phosphorus concentrations, but to apply this statement to all Florida estuaries would be tenuous. From a biological standpoint, the statement that all estuaries of the study area are overnutrified at this time is incorrect. Except for areas of low circulation and nitrogen enrichment (as in Hillsborough Bay), detrimental influences of nutrient enrichment on these estuarine ecosystems is minimal at this time. The stimulation of productivity resulting from present levels of inorganic nutrient loading helps support some of the most productive estuarine fish and shellfish communities along the southeastern U.S. coastline. It should be pointed out, however, that potential for over-nutrification in the study area estuaries is high. The best available evidence suggests that since Charlotte Harbor and Tampa Bay have abundant supplies of phosphorus, combined nitrogen is a significant limiting factor to further productivity. The addition of substantial quantities of combined nitrogen (as in sewage effluent) could easily result in over-enrichment and undesirable biological alterations as has been experienced in the Hillsborough Bay area. Additionally, a reduction in water circulation and mixing in these estuaries might also be manifest in areas of over-enrichment, even at present nutrient loading levels. A conclusion of the EIS (Volume I, Proposed Action), is that reduction of artificially induced plant nutrient material is needed to protect water quality.

W-233

We are unaware of any adverse effects of reagents utilized in the beneficiation process. Concentrations of any of these reagents in discharges would be extremely low. No adverse effect on biota in settling areas nor in receiving streams containing 100 percent settling pond discharge have been noted. One possible exception is the use of ammonium hydroxide in lieu of sodium hydroxide in the beneficiation process. This has in some instances resulted in over-enrichment of settling ponds, resulting in increased mosquito production (personal communication with Mr. Frank Wilson, Polk County Environmental Control Dept.).

W-234

The concern for new data is one shared by the EPA, but perhaps a clarification of what is meant by new data is in order. Data and information pertinent to assessing the environmental impact of the central Florida phosphate industry is contained in numerous basic and applied research reports, journal articles, trade publications, monitoring reports, data bases, exhibits for State and Federal permits, government agency reports and public media reports. The EPA performed a field survey, and with the contractor and other agencies developed data and information useful in analysis of the state of present and projected future environmental systems. The commentor will find these data and information in the working papers (revised and available through the NTIS). There are several issues requiring continued investigation and analysis to resolve and many of them have been identified in the working papers and the EIS.

W-235

The Development of Regional Impact (DRI) Application for Development Approval (ADA) was described in the working papers (Volumes II and III of the NTIS papers). Specific mention of the DRI/ADA process and the opportunities for environmental management presented by it are now included in the EIS (Section 4.3).

W-236

Limitations of the study are acknowledged.

W-237

The section on radiation was prepared with the intention of providing a full perspective of the radiological impact associated with the phosphate industry. Recognizing that specific recommendations to the State of Florida concerning indoor radiation exposure due to radium-226 associated with phosphate-related land are currently under development by the EPA (to be tentatively proposed in the Federal Register in October 1978), specific statements in this EIS on this subject would be premature. With regard to radiation exposure via the ingestion pathway, a report has been drafted by EPA's Eastern Environmental Radiation Facility entitled "Doses Due to Consumption of Food Associated with Reclaimed Land and Phosphate Ore. By-product Usage." This draft report is undergoing final review prior to publication. Upon release for publication, the data provided in this report will be incorporated, time permitting, in the EIS. In any case, this report and the information in question will be available by Fall 1978.

The quality of water entering the deep aquifer through connector wells is actively monitored. Regulations of the Southwest Florida Water Management

District (SWFWMD) concerning monitoring can effectively be applied depending on the effectiveness of implementation and the full cooperation of industry. A surveillance monitoring program of radiation levels is probably a good suggestion, particularly in areas of Sarasota and Manatee Counties where radium-226 in ground water is already rather elevated relative to other areas of Florida and relative to acceptable drinking water quality. The problem will be to bound the goal of monitoring to some manageable level in terms of involved agencies, costs, etc. It will also be necessary to focus the effort to the most serious matters and for sufficient duration and intensity to produce at least a statistically valid data base.

W-238

Recognition of local, State, and Federal governments in the review, permitting, and monitoring of mining activities is provided in Working Papers, Volume II (NTIS, Vol. II).

W-239

See response to Comment W-235. The applicants with which EPA has dealt to date have for the most part completed the DRI process. For those that have not, there would be every reason to proceed simultaneously, utilizing the same original data for the DRI and EIS. EPA has pursued the possibility of combining the two processes, and encountered certain problems. For example, the third party EIS process requires the consultant to be selected and paid by the applicant, but approved by and directly responsible to EPA. Industry has not been amenable to paying a consultant to develop a DRI, while the consultant is directly responsible to a government agency. In any event, EPA is certainly willing to do its share toward minimizing duplication of effort, by combining as much original data gathering as possible, and assuring that this is done during development of the Plans of Study.

W-240

This is precisely true. The legal basis provided by NEPA to develop this EIS is indeed the federal permit system. The NEW Source NPDES Permit constitutes the Federal Action which is subject to NEPA. Therefore, mitigation of impacts must be implemented through the federal permit system.

W-241

Text modified.

W-242 through W-254

These comments, which are also part of the Bradenton Public Hearing record, have been answered previously (T-6 through T-17).

W-255

Text modified.

W-256

See response to Comments T-12 and T-54. The water quality impact is certainly both local and regional.

W-257

The applicable requirements of the Surface Mining Control and Reclamation Act and regulations should certainly be considered in the site-specific EIS's, but we cannot legally require adoption of the coal mining requirements through the EIS process. The State of Florida has reclamation requirements and an EIS must first evaluate effects of a mining plan meeting existing requirements. If mitigating measures are in order, Surface Mining Act requirements which go beyond State requirements should then be considered.

W-258

Refer to responses to Comments W-175 and W-177.

W-259

These sections of the FWS report should indeed be a source of information for persons preparing site-specific mining and reclamation plans that are taylored to fit the proposed action.

W-260

Refer to response to Comment number T-6.

Detailed analysis of the pollution potential of any major new air pollution source proposed by the phosphate industry (the projections in the EIS includes none) will be required by the Federal Clean Air Act Amendments of 1977 (Federal Register, Volume 43, No. 118 - Monday, June 19, 1978).

W-261

Data used by the DER indicate that the inverse relationship seems to extend as far back as 1967 (Volume VII, Section 2/Volume III-NTIS). No attempt was made in the DEIS or the working papers to downplay the importance of a continuing monitoring program for vegetative fluoride levels. To the contrary, a vegetative fluoride monitoring program is recommended.

W-262

Concur.

W-263

Text modified.

W-264

While this information is still not in the FEIS, it will be included in the Proposed Radiation Protection Recommendations to be published in the Federal Register this month.

W-265

Existing data on radionuclide concentrations in food associated with reclaimed land will be provided in an upcoming EPA report. (See response to Comment W-237) Any specific impacts due the proximity of food crops or cattle on phosphate-related land would be evaluated in the site-specific EIS. Because sufficient radiological pathway data is lacking, it is not possible to deal with the associated population impact in a quantitative manner.

W-266

Text modified.

W-267

Concur. Text modified.

W-268 through W-272

The commentor is correct in discerning that section 5 of the DEIS is composed of generalizations. The purpose was to remind the reader, in a succinct manner, how the short-term use of our physical environment (which must necessarily include economic "'oranges'") compares to the maintenance and enhancement of long-term productivity of our physical environment (environmental "'apples'"). This generalized approach is consistent with the recently proposed regulations by the Council on Environmental Quality, which it is assumed the commentator referred to. Those regulations state that the Council does not intend that material such as contained in Section 5, be a duplication of material contained in other sections such as presented in sections 3 and 4 of Volume I and Section 2 of Volume II of this FEIS. Also, please refer to the response to Comment number W-208.

W-273

Text modified to be specific as possible while maintaining flexibility for future changes.

W-274

The Federal Government does in effect adopt Florida Standards, and include Florida Standards in NPDES Permit Conditions, in accordance with Section 301(b)(1)(c) fo the Clean Water Act.

W-275

Text modified.

W-276

The commentor properly points out a limitation on mitigation of disturbance of land by reclamation and preservation. The action by the Federal Government under evaluation by the EPA for this EIS is realted to issuance (or non-issuance) of air and/or water permits not whether to restrict (or not restrict) land uses subsequent to mining. Restrictive covenants administered by State or Federal authority are one alternative for preserving the benefits of preservation or reclamation of lands. This issue is more properly addressed by State, regional and local land planning authorities as it involves physical and socioeconomic impacts beyond the phosphate industry. It justified an impact assessment as an integral part of a comprehensive environmental land use planning program encompassing several alternative land uses.

W-277

A standard practice used by EPA in regulatory development to achieve a balance between the health effects controllable by a standard or guidance, and the cost associated with achieving this control is termed a cost-benefit analysis. Such an analysis is normally calculated over the projected term of the exposure with consideration for "immediate economics" limited to those instances where the soils and increase the rate of runoff. Lakes would act as impoundments and tend to reduce runoff.

W-282

The reduced water usage scenario was not chosen because of its effect on runoff in the study area. It was treated in more detail in a working paper (Volume XI, Section 5/Volume VII-NTIS).

W-283

Referring to the response to W-281, the flow changes due to the proposed action are associated with rainfall events which relate to high flow periods in the Peace River. The amount of the change will be slight relative to the river flow at these times, and hence have little effect on the estuarine system. The changes which were projected to be noticeable by the year 2000 are not expected to occur in the Peace River itself or its larger tributaries, but in the small tributaries that might be quite seriously affected by local mining activity.

W-284

The change in electrical demand attributable to the expansion of phosphate mining to the south while closing mines in the northern part of the study area is insignificant, representing a very small change in the power generated in the Tampa area. That change in demand does not in itself provide justification for the FP&L De Soto plant or any other expansion of generating facilities in the area. The construction of a cooling lake to be filled from the Peace River will require a detailed analysis to determine its effect on the river-harbor system, but is not within the scope of this study which is concerned with effects resulting from phosphate industry activities. (Also note W-278, T-5)

W-285

The commentors concern for (waters of the U.S. and Wetlands) is shared by the Federal government and thus the proposed action contains provisions for protecting those resources (see Section 2 of this FEIS).

W-286

These species are included among the important ones whose destiny brought about the considerations of equivalent wildlife habitat and wetlands in the proposed action.

W-287

The commentors concern for (waters of the U.S. and wetlands) is shared by the Federal government and thus the proposed action contains provisions for protecting those resources (see Section 2 of this FEIS).

W-288

(Letter from Mr. Allen Jaeggi to Senator Chiles)

Copy of response is reproduced below:

June 5, 1978

Honorable Lawton Chiles
United States Senate
Federal Building
Lakeland, Florida 33801

Dear Senator Chiles:

Thank you for your letter of May 17, 1973, transmitting the comments of Mr. Allen Jaeggi on the Draft Areawide Environmental Impact Statement, Central Florida Phosphate Industry. Mr. Jaeggi's letter and responses to it will be included in the Final EIS which is projected to be completed by July 31, but we will comment on his letter at this time so you may reply.

The Areawide EIS offers a scenario of development of the phosphate industry which we feel makes the industry as compatible as practicable with other desired and intended land uses in Central Florida. It is an areawide, generic EIS, and, as such, provides a base line for required Environmental Impact Statements and Development of Regional Impact Statements for new source mines and chemical processing operations. These site specific studies would have been required with or without the Areawide EIS. It provides areawide and cumulative effects of the entire Central Florida Industry which would not have been adequately covered in individual site specific studies.

Mr. Jaeggi's comments in paragraphs two through seven refer to the summary sheet in the Preface of the Draft EIS. He is correct in stating in paragraph two that other land uses also alter the surface, and that some of these may have a more drastic effect on such things as wildlife habitat. However, all of these other uses combined do not approach the surface area altered per year by phosphate mining in the seven county study area. This is not to say that adverse effects of any of these uses should not be minimized. The areawide EIS takes advantage of available technology, most of which was developed by the industry, to minimize adverse effects of the phosphate industry while allowing continued industrial development. Paragraphs three through seven of his letter refer to 3.B. through 3.G. of the Summary Sheet. These effects indeed occur, and the extent to which they occur are detailed in the EIS and the Working Papers.

Mr. Jaeggi's comments on the Proposed Action in the remainder of the letter indicate that he believes decisions regarding elimination of rock drying, elimination of conventional above ground slime ponds, protection of wildlife habitat, and protection of wetlands should be left to the industry and not to "governmental agencies regulating where they shouldn't." As stated, the Areawide EIS utilizes available technology to minimize effects of an industry which most Central Floridians will tell you has not always been compatible with other land uses. Several proposed new source mines with which we are currently dealing have already agreed to implement all of the requirements in the Proposed Action. There is one proposed new source mine which wishes to dry rock for export, but intends to meet all of the other requirements. If this dryer is allowed, the site specific study will determine methods to minimize its effects. We believe that these examples demonstrate the industry's general willingness to make itself more compatible with other land uses in Central Florida.

Mr. Jaeggi's comments, and others we are receiving on the Draft EIS, are welcome. We believe that revisions to be incorporated into the Final EIS as a result of these comments will make it a much more valuable document, not only to EPA, but to other agencies, citizens of Central Florida, and to the industry.

Sincerely yours,

/s/ John C. White
John C. White
Regional Administrator

REMcNeill:ml:6/5/78

W-289

The FEIS format has been revised, and it is hoped the commentor finds a clear and coherent identification and analysis of impacts.

W-290

Statements on pp. 1.70 and 4.3 of DEIS have been revised, based on comment from Secretary of Interior.

W-291

This paragraph indicates a gross misinterpretation of the conclusions of the DEIS. Hopefully, Volume I and the responses in Volume III of the FEIS will clarify the conclusions. Responses to individual comments on each of the issues mentioned in this paragraph follow.

W-292

This comment has been addressed by revising the subject statement.

W-293

Text modified.

W-294

Mapping precise locations of slime ponds in the study area was beyond the scope of this project. Locating slime ponds is not a prerequisite to stating a relationship between slime pond spills and negative effects on water-based recreation.

Slime pond placement in relation to watersheds in the study area was carefully considered when stating a potential negative relationship with regard to wastewater spills nad water-based recreation.

W-295

Saltwater encroachment near the coast is a potential if one or a combination of the following should occur: 1) if the potentiometric surface near the coast were decreased toward sea level; 2) if the potentiometric gradient near the coast were decreased causing a decrease in fresh water outflow to the sea; or 3) if pumping of the groundwater supply near the coast became extensive. The third item would have the effect of generating a local depression in the potentiometric surface. The analyses performed in preparation of this

EIS indicates that present and projected phosphate industry water usage will not in itself seriously affect the potentiometric surface or gradient near the coast. In summary, the projected action seems to provide little impetus for the saltwater encroachment that is feared by coastal water users. Existing data do not demonstrate encroachment of the salt front (other than locally due to excessive pumping) due to recent changes in the potentiometric surface mapped by USGS; changes which are a result of all aquifer users, not just the phosphate industry. A study designed to characterize the location and movements of the salt-fresh water interface would be desirable for those planning municipal water supplies near the coast, but was beyond the scope of this areawide impact study.

One other factor regarding the water usage projected for the phosphate industry in response to the proposed action is that many areas proposed to be mined are currently under irrigation for agricultural purposes. In these areas the use of the water would change, but the quantity used could increase, decrease, or remain unchanged depending on the extent of existing agricultural pumpage. This factor was not precisely simulated in the modeling analyses done by USGS for this study, due to a lack of detailed data on agricultural water usage.

The aquifer is recharged to various degrees in many portions of the study area by surface recharge. Water is also transported laterally from the higher areas inland toward the coast, but slowly. The pumping by the phosphate industry in response to the proposed action is not expected to further deteriorate the water supply problem due to intercepting and cutting off the freshwater flow from inland areas toward the coast. The Floridan aquifer has historically been of poor quality near the coast, and should not be materially affected by the proposed and projected industry pumping (working papers Volume V, Section 1/ Volume V-NTIS).

Available data indicate upconing of mineralized water from underlying areas of the aquifer will not be a problem in areas to be mined under the proposed action. This has been a problem in some areas due to abandoned or improperly constructed wells.

Most of the lakes in the Ridge area communicate with the surface water table, and their level will fluctuate with the surface water table. Those that are fed by connections with the Floridan aquifer through sinkholes or springs will be affected by changes in the potentiometric surface. However, the changes are generally reversable, and as the mining activity moves south, the potentiometric surface should recover in the Polk County Ridge area.

W-296

Concur with this statement.

W-297

The revised text, and responses to Comments T-54 and T-55, address this comment. "Water pollution control equipment" for phosphate mines consists of earthen settling areas; and for chemical plants consists of chemical (lime) feeders and earthen settling areas.

W-298

The potential for extremely damaging pollution loading through failure of a slime pond dike was certainly a major factor leading to the conclusions reached in this EIS. The Proposed Action will minimize this potential.

W-299

Mapping of the study area was outside the possibilities of this effects assessment. Additional information on upland and wetlands habitats and their significance is in working paper Volume XI. In an effort to maintain an EIS of reasonable length, effects and impacts were summarized - perhaps to the exclusion of important points. Selection of what to cover was difficult, and since the wetlands situation apparently is of greatest import to Florida and is the greatest extent of endangered lands to be mined, it is emphasized. Equal "worst case" impact was given to mining sandhills, sand pine scrub, and natural hammocks. Definition of specific wildlife impacts was precluded by the inability to perform field work.

W-300

Similar conclusions were stated in this EIS. A review of our effects assessment (working paper Volume XI/Volume VII-NTIS) will reveal several references to the FWS report.

W-301

We believe the wording of the FEIS is clear in its discussion of the radiation hazards to human health. Indoor radiation levels observed in structures built on phosphate-related land indicate that external gamma radiation and radon decay product levels are frequently higher than normal background. In considering health risk estimates, the relative health risk associated with exposure to short-lived radon decay products is usually much greater than the accompanying exposure to direct gamma radiation. Although it is desirable to minimize exposure to both components, the reduction of exposure to radon decay products is of principal interest.

With respect to radon release from gypsum piles and slime disposal areas, some very good points are raised. Such point sources are analogous to uranium tailings piles, but there are sharp differences in radium (radon parent) and moisture contents which in turn affect the radon release per unit time. NRC is advocating soil cover and other stabilization techniques to reduce the radon release from uranium tailings piles to no more than twice background. Site-specific studies must first determine the release rates from phosphate piles, compare these to background, and then develop stabilization requirements.

The State of Florida is licensing uranium recovery facilities (they are not classified as mills) under Section 274 of the Atomic Energy Act. At present, there is one operating, licensed facility, with two licensed, but not operating. Pursuant to the license issued, specific requirements include a preoperational radiological survey, with an annual resurvey, continuous stack monitoring, and individual occupational monitoring. Further details are available from Mr. Ben Warren (Licensing and Legislation Division, Radiological Health, DHRS) 904-487-2437.

As noted in the DEIS (pp. 1.50 - 1.52), radon-222 and its decay products are major sources of exposure to occupants of structures located on phosphate-related land. For individuals exposed occupationally in the phosphate industry, radon-222 and its decay products are of less significance due to various factors including ventilation and term of exposure, whereas, direct exposure and radium ingestion become relatively more important. Radon exhalation from phosphate waste sites (gypsum piles, slime ponds, etc.) may be significant as a source term, although the actual increased exposure due to elevated radon concentrations would likely be small in most cases for off-site residential occupants. However, due to the possibility of exposure from these so-called "point sources," the EPA is currently evaluating the need for regulatory action under the authority of the Clean Air Act, as amended.

W-302

The revision to reserve and resource data is appreciated. The reader must appreciate, though, that when projections as complexly interrelated as are those made to make assessment of impacts of the alternatives herein considered, groundrules must be set so as to be able to describe projected conditions. If the data submitted by the commentor were to replace the data used, it would imply that data was part of the groundrules and then a basis for projections. However, to make that implication true, a reanalysis and new projections are required. In summary, as any of the data bases are updated or refined, a reexamination of the efficacy of the findings and decisions documented in this EIS is in order. Such activities are the heart of the planning and implementation process to which this EIS is to be a tool. The tables offered by the commentor are reproduced herein for the readers examination.

W-303

See response to Comment W-384.

W-304

Data supporting the quoted statement are provided. The EPA report "Population Radiation Dose Estimates from Phosphate Industry Air Particulate Emissions" provides the data, which are utilized in the EIS and in response to Comment 384. As for problems encountered in transporting undried rock, these problems have been overcome. The Proposed Action allows an exception to be made in cases where rock is shipped outside the State of Florida. In such cases, the site-specific EIS will determine control measures to resuce radionuclide emissions to acceptable levels. This will require more efficient controls than those needed to meet existing requirements for particulate emissions.

W-305

The "dry conveyor" is not part of the Proposed Action. Methods of dewatering colloidal clays have been proven at several mines other than Brewster.

W-306

Wording of the Proposed Action allows recovery of phosphate from slimes. It does not categorically require combining slimes and tailings.

W-307

Conclusions of the FEIS are totally compatible with subject legislation. Goals are apparently quite similar.

W-308

A preliminary version of that USGS report which was used to support this DEIS presented information that led to the conclusion. The open-file report cited does not contain any specific conclusions with regard to the Sarasota ground water supply.

W-309

To the best of our knowledge, this statement is incorrect. The new source mines in Manatee, Hardee, and DeSoto Counties have proceeded on or ahead of schedule toward permit application and environmental studies. EPA has not been informed of any cancellation or delays of plans for new mines in these areas because of market conditions.

W-310

Along with the commentor's brief overview, the reader is encouraged to read working papers Volumes I and II (the NTIS version), and "Environmental Land Use Planning," proceedings of a seminar in Bartow, Florida, July 27-28, 1977, published jointly by EPA and Texas Instruments Incorporated.

W-311

The transcript of hearings, and reproduced written comments provided in this volume should satisfy this concern.

W-312

Text modified.

W-313

Text modified.

W-314

Text modified.

W-315

Text modified.

W-316

See NTIS Volume II, for a description of State and local regulatory authorities and responsibilities.

W-317

The sampling problems were related primarily to the thermal degradation of the sample collecting solution both during the actual sampling period, and after sampling but prior to sample collection and processing. The problems are discussed in more detail in the working papers (Volume VII, Section 2/Volume III-NTIS).

W-318

Text modified.

W-319

Text modified.

W-320

Text modified.

W-321

Text modified.

W-322

Text modified.

W-323

Text modified.

W-324

The contamination from abandoned or uncased wells is a more apparent potential impact to water quality than upconing due to inland pumping because the former has been documented to occur. The details of projected water demands are shown in a working paper (Volume V, Section 1/Volume V-NTIS).

W-325

The use of average daily rates in terms of mgd allows the use of more conveniently sized and recognizable numbers in tables.

W-326

Text revised.

W-327

Recovery of any material, radioactive or not, for a useful purpose is certainly the most effective method of pollution control

W-328

It cannot be stated that these concentrations are unrelated to phosphate occurence. It can be stated with a high degree of certainty, however, that they are unrelated to phosphate mining and processing activities. The text has been revised.

W-329

Text modified.

The intended purpose of the table was to allow the reader to examine the sources of income within the study area. The information used was from the University of Florida and considered more appropriate for the purpose than information from U. S. Department of Commerce "County Business Patterns."

W-330

Multipliers used were those estimated by the U. S. Bureau of Mines. These were examined and tested by the Study Team economists and considered valid for impact analysis. BEA multipliers are more macro in nature.

W-331

Text modified.

W-332

The details of the use of connector wells on water quality are discussed in Volume XI, Section 2/Volume VII-NTIS. The potentiometric surface map referred to is found in Volume V, Section 1/Volume V-NTIS.

W-333

Mapping of areas within the three categories of wetlands will be possible when the Fish and Wildlife National Wetlands Inventory completes wetlands mapping for the seven county study area. Meanwhile, mapping will have to be accomplished on a site-specific basis for each New Source EIS.

W-334

See response to Comment W-56.

W-335

Our data does not agree with the statement.

W-336

See response to Comment W-305

W-337

EPA has not redefined wetlands. The categories are in order of importance and need for protection.

W-338

Text modified.

W-339

The values discussed are based on an industry survey of water usage, carried out by EPA in 1977 (Volume V, Section 1/Volume V-NTIS).

W-340

Slimes have certainly proved amenable to flocculation.

W-341

This topic is discussed in more detail in working papers Volume XI, Section 2/Volume VII-NTIS.

W-342

This comment is quite inconsistent with Comments 1 through 8 on page 4 of the first attachment to the Dept. of Interior comments. As for the March, 1978 Fish and Wildlife Service report on the Osceola National Forest, we find much of the Summary and Conclusions to be in total disagreement with the text. It was not used for reference in this EIS.

W-343

Text modified.

W-344

It would be desirable to project the changes in the aquifer system as a result of all water demands as well as being able to isolate the phosphate industry contributions.

W-345

Text modified.

W-346

Text modified.

W-347

Text modified.

W-348

Text modified.

W-349

Text modified.

W-350

Text modified.

W-351

Since the model runs available prior to the preparation of the impact statement were considered preliminary, it was felt that displaying such change maps would create the false impression of a very accurate prediciton, as opposed to the first approximation that they indeed represent. Also refer to response to Comment 348 from DOI.

W-352

No comment on the first part of this comment.

A study of the lake levels in the Ridge area that fluctuate with the potentiometric surface of the Floridan aquifer was not done as part of preparing this EIS. In general, the movement of mining activity to the south is expected to result in a decrease in the withdrawal rate in the Ridge area.

W-353

Mitigative measures have been discussed in this EIS.

Documentation of upconing due to pumping in inland regions of the study area was not obtained in the existing data.

W-354

"Unfortunately" seems appropriate.

W-355

Text modified.

W-356

Quantification of dislocation of the labor force and social costs of unemployment was not considered feasible due to insufficient data on monetary factors.

W-357

Use of constant dollars over time is an accepted economic analysis methodology. Use of constant dollars allows for a more perceptive view of effects without the distrotion or uncertainties of inflation being introduced.

W-358

Text modified.

W-359

Transfer of water to or from the surface water table would effect changes in the potentiometric surface, but the extent of the changes is not sufficiently documented to be quantified.

W-360

Text modified.

W-361

Refer to Volume XI, Section 2/Volume VII-NTIS.

W-362

The statistics cited are based on the U.S. Corps of Engineers' *Four River Basins Study*. The validity of these data are discussed in Volume XI, Section 2 and 3/Volume VII-NTIS.

Discussion of benefits of the lakes is not appropriate to this section. The value of lakes is discussed elsewhere in this EIS.

It is appropriate to mention here what *might* occur given different regulations regarding reclamation. The potential for prevention of loss of wetlands is discussed in the "potential mitigation" measures section of this EIS.

W-363

Refer to response to response to Comments 353, 324.

W-364

Refer to response to Comment number 351.

W-365

Text modified.

W-366

Mention of problems near boundary nodes was made in the DEIS.

W-367

Text modified.

W-368

Because of the small amount of timber involved, its loss, as a mineral resource, due to mining was considered to be of negligible impact.

W-369

The commentor is referred to Section 6, Volume I of this FEIS.

W-370

Text modified.

W-371 and W-372

Refer to response to Comments 295 and 308.

W-373

The changes referred to are comparing the simulated 1985 and 2000 potentiometric surface to 1975. See response to Comment 351 for reference to the change map.

W-374

The 10-foot decline predicted by the model does occur in a "thick" area of the Floridan aquifer. Also refer to response to Comment 295.

W-375

The water quality in the Floridan aquifer is discussed under "primary effects."

W-376

Refer to response to comment number 357.

W-377

The commentor is correct in pointing out the, what we assume to be, economic considerations of scale and costs of extraction.

W-378

Previous discussions have indicated that there would be little impact on the quality or quantity of water in the Floridan aquifer due to the proposed action.

W-379

The commentor, and reader, are referred to figure 2.3, Section 2, Volume II of this EIS, which shows that 98 percent of the estimated reserves would be mined under the proposed action by the year 2000. Even a more liberal estimate using the cumulative sum from mining operators projections (based on land use data) and the 1978 revised reserve estimate (see response to Comment 302) shows the depletion of reserves at 92 percent in the five county area reported by the year 2000.

W-380

Text modified.

W-381

Text modified.

W-382

Refer to numerous responses above for wetlands definitions and other information on wetlands, as well as reference to the need for further development of criteria for judging their relative value.

W-383

The purpose of this EIS is not to defend the Surface Mining Control & Reclamation Act of 1977. We reiterate that while the Act and regulations published to date apply primarily to coal mining, there are some provisions which should be considered to be applicable to phosphate mining.

W-384

The rationale for eliminating the drying process in the Proposed Action (selected scenario) are as follows:

1. Technology has been developed within the last few years whereby wet rock can be acidulated with undiluted commercial grade sulfuric acid. This process has proven to be economical, efficient, and results in a significant decrease in atmospheric emissions of particulates and radionuclides. A typical rock dryer meeting EPA and State air emission standards emits 60,000 kg (66 tons) of particulate annually, which includes 27 x 10^8 pCi (picocuries) of radium 226, 27 x 10^8 pCi of thorium 230, and 50 x 10^8 pCi of uranium. Emissions of radionuclides exceed those allowed by NRC for a 1000 megawatt nuclear power plant by greater than ten-fold. In addition to stack emissions from the dryer, emissions from transfer and transportation of the dryed rock from the dryer to the chemical plant are equal to or greater than those from the dryer stack.

2. Three chemical plants in Central Florida have converted to wet rock acidulation on a full scale basis. Two others are in planning or design stages of conversion. The trend indicates that all chemical plants in Central Florida will convert to wet rock processing within the next few years.

3. We agree that environmental regulatory agencies cannot and should not dictate production processes. However, in establishing emission limitations, EPA is required to take into consideration technology and costs of control equipment. Emission limitations are always based on available equipment which is economically achievable, while at the same time considering environmental effects. After emission limitations for phosphate rock dryers were established, technology developed which allows elimination of the drying process for rock chemically processed in Central Florida. The Areawide EIS of necessity considered this new technology, and since the trend was toward wet rock processing, the selected scenario of phosphate development which became the basis of the Proposed Action and delineated effects, included this new technology. The Areawide EIS is not regulatory, but instead is the basis for initiating site-specific EIS's. However, any new source mines which deviate from conditions in the Proposed Action will need to make a case for the deviation, and establish areawide as well as site-specific effects.

4. The argument that the Areawide EIS should not have mixed energy considerations with environmental considerations is unfounded. The National Environmental Policy Act specifically requires that consideration be given to irreversible and irretrievable commitments of resources. The site-specific EIS's will also be required to consider commitment of resources, including energy resources. For this reason, when exceptions are made to the proposed action, effects on resource depletion will have to be determined as well as environmental effects.

5. Wording of the Proposed Action allows exceptions to the dryer elimination condition. The EPA Office of Radiation Programs has agreed to provide guidance on allowable radionuclide emissions and exposure levels to be considered in site-specific studies where the exception applies. Effects on ambient particualte and fluoride levels can be determined with modeling after applying the PSD requirements.

W-385

The Florida Effluent Limitations are existing requirements. See response to Comments T-53 and T-54.

W-386 through W-390

Changes have been made in wording of the Proposed Action. Each of these comments have been addressed in other responses. Suggested wording provided in these comments would not result in meaningful bases for site-specific studies.

W-391

See response to Comment W-237.

W-392

Beker Phosphate Co. has been determined to be an "Existing Source," and thus is not a part of the Proposed Action. However, since this company has not initiated mining and beneficiation operation, new technology such as elimination of conventional above-ground slime settling areas would certainly be feasible.

W-393

Agree.

W-394

Additional radiological samples have been taken in the Peace River over the past year by the EPA Eastern Environmental Radiation Laboratory in Montgomery. As in previous sampling, the Peace River and other surface waters in Central Florida have remained well below drinking water criteria for radium 226 and other radionuclides.

W-395

Slimes do contain a significant quantity of radionuclides (45 picoCuries/gram on a dry weight basis). During a slime loss or slime pond dam break incidents, the river certainly exceeds drinking water criteria several fold if samples are not filtered. These radionuclides and other contaminents associated with slimes are in insoluble form, however, and thus do not offer a significant public health hazard. If and when such water is used for potable supply, it is undoubtedly subject to filtration, and suspended solids are removed. This is not to say the concern expressed by Mr. Smith is not valid. The industry and regulatory agencies must continue to strive to prevent any future dam breaks or slime spills to the river.

W-396

Sampling of sediments in the lower stretches of the Peace River for radiological analyses is needed. It is probable that the slimes deposited in the river and harbor in the past are not a problem because of subsequent sedimentation and burial. Because of this, and reasons listed in the previous response, such sampling has not received a high priority.

W-397

A report entitled "Florida Phosphate Land Evaluation Criteria," by EPA Eastern Environmental Radiation Laboratory, is in draft form and will be made available to Manatee County. This report should answer Mr. Bartle's questions and concern.

W-398

Revised Working Papers will be sent as required.

W-399

See revised Working Papers Volume II.

W-400

See section in Volume I, FEIS, on relationship between site-specific and the areawide EIS.

W-401

See response to Comment W-384.

W-402

Wording has been revised in Volume I, FEIS.

W-403

See response to Comment T-54.

W-404

There is sufficient precedent to assure wetlands contiguous to waters of the U. S. and the State of Florida can be protected.

W-405

Determination of categories 1, 2, and 3 wetlands will be made on a site-specific basis.

W-406

This will certainly have to be considered in site-specific determinations.

W-407

The wording in the DEIS was not intended to imply that wetlands protected from phosphate development would not need to be protected from any other type of development. The need for protection or for restoration as a wetland applies to any type of development.

W-408

See response to Comment W-56.

W-409

The wording in Volume I, FEIS, is intended to result in recirculation of non-process water to the maximum extent practicable for new sources. The recommendation for existing source chemical plants to also strive for maximum recirculation of non-process water still stands.

W-410

The FEIS contains sufficient caveat. In a study of this type, data are seldom sufficient for proof of conclusions beyond any doubt.

W-411

See response to Comment W-384.

W-412

See response to Comments T-53 and T-54. The State effluent limitations take precedence in any case where State limitations are more stringent than those of EPA.

W-413

See response to Comment W-306.

W-414

See response to Comments W-404 through W-407.

W-415

Where fluoride recovery exists, the pond water fluoride concentration is lower, and emissions of fluorine to the atmosphere are thus lower.

W-416

See response to Comment T-55.

W-417

See response to Comment W-384.

W-418

We believe the conclusions reached in the study are sufficient to support the Proposed Action. Site-specific studies will be required to develop further information needed prior to issuance of each new source permit. See response to Comments T-4 and T-5.

W-419

We believe the FEIS is sufficiently flexible, and does require individual site-specific EIS's for new source operations.

W-420

The Proposed Action recognizes the need for an initial slimes holding area, and holding capacity for excess clays.

W-421

Such testimony was given both at the Public Hearings and in written comments, and have been seriously considered. The DEIS and Proposed Action have been revised as a result of the testimony.

W-422

See response to Comment W-384.

W-423

See responses to Comments W-29, W-30, W-61 and W-97. Wording of the Proposed Action allows flexibility in interpreting categories of wetlands. For example, if it is later shown that wetlands can be restored to perform pre-mining functions, then those that are now Category I would become Category II.

W-424

The Proposed Action purposely does not specify a method of sand/clay mixing techniques, nor even what alternative use is to be made of the clays. The reason for not specifying a method is to encourage development of technology for alternative uses of slimes.

W-425

The alternative use of clay, such as sand/clay disposal, will certainly have to be determined on a site-specific basis.

W-426

The concerns in this letter have been addressed in the FEIS, and in responses to other comments in this Volume.

W-427

Text modified.

W-428

See response to Comment W-430.

W-429

The dry conveyor is not part of the proposed action.

W-430

Response to Mr. Kelahan's letter to Senator Chiles is reproduced as shown:

June 6, 1978

Hon. Lawton Chiles
Federal Building
Lakeland, Florida 33801

Dear Senator Chiles:

Thank you for your letter of May 10, 1978, transmitting the comments of Mr. Michael E. Kelahan on the Draft Areawide Environmental Impact Statement, Central Florida Phosphate industry. Mr. Kelahan's letter and responses to it will be included in the Final EIS which is projected to be completed by July 31, but we will comment on his letter at this time so you may reply.

The Areawide EIS offers a scenario of development of the phosphate industry which we feel makes the industry as compatible as practicable with other desired and intended land uses in Central Florida. It is an areawide, generic EIS, and, as such, provides a base line for required Environmental Impact Statements and Development of Regional Impact Statements for new source mines and chemical processing operations. These site specific studies would have been required with or without the Areawide EIS. It provides areawide and cumulative effects of the entire Central Florida Industry which would not have been adequately covered in individual site specific studies.

Of the four comments made in Mr. Kelahan's letter, only the one regarding elimination of slime ponds applies to the selected scenario. His other comments are on portions of scenarios which are not included as part of the Proposed Action. He is quite correct in the comments regarding use of a dry conveyor, complete recirculation of all water in the mining operation, and uranium recovery. These were not selected as requirements in the Proposed Action for some of the very reasons he gives. The Proposed Action does, however, encourage uranium recovery and emphasizes additional water conservation measures.

As for elimination of slime ponds, we believe Mr. Kelahan's concerns are alleviated in the Proposed Action wording.

Temporary slimes settling and storage is allowed in cases where the percentage of clays versus tailings is too high for utilizing proven methods of slimes-tailings reclamation. Please refer to page 1.70 of the enclosed Draft EIS for the Proposed Action, which constitutes the selected scenario. The paragraph at the bottom of page 1.70 and top of page 1.71 should relieve Mr. Kelahan's concern.

Mr. Kelahan's comments, and others we are receiving on the Draft EIS, are welcome. We believe that revisions to be incorporated into the Final EIS as a result of these comments will make it a much more valuable document, not only to EPA, but to other agencies, citizens of Central Florida, and to the industry.

Sincerely yours,

/s/ John C. White

John C. White
Regional Administrator

REMcNeill:ml:6/6/78

W-431

Text modified.

W-432

Text modified.

W-433

Text modified.

W-434

See response to Comment W-409

W-435

Text modified.

W-436

Once per shift sampling is necessary to assure monitoring systems remain calibrated, and are operating properly. There have been several incidents where acid spills occurred during periods when pH monitoring equipment was not operating.

W-437

See response to Comment W-384.

W-438

Explicit support of local regulations and requirements are not necessary in this EIS. One of the ground rules of the Plan of Study was that all existing local, regional, State and Federal requirements would be part of each scenario examined. In most situations, local approval has been obtained prior to the time initial application is made to EPA.

W-439

Text modified.

W-440

Text modified.

W-441

Text modified.

W-442

Totally agree with these comments.

W-443

Concur.

W-444

Concur

W-445

See response to Comment W-384.

☆U.S. GOVERNMENT PRINTING OFFICE: 1979-641-820 6271REGION NO. 4